

THE US-CHINA FACE-OFF IN THE ASIA-PACIFIC REGION:
WHAT ANSWERS CAN THE OFFENSE-DEFENSE THEORY PROVIDE?

BY

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APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the Indian or the US Governments, Department of Defense, the Indian Air Force or the United States Air Force, or Air University.



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ABSTRACT

The study comprises an analysis of the security dilemma situation in the Asia-Pacific region that has evolved because of China's perceived aggressive behavior and the US's rebalance policy. The study uses a template based on a Cold-War era, structural-realist offense-defense theory to seek answers. The template claims that if the intent of the two belligerents can be identified clearly, then the offense-defense balance can provide useful answers to the questions related to the security dilemma issues. The author assesses the impact of three factors—technology, geography, and allied support—related to the offense-defense balance, and concludes that at present, the defense has the advantage and therefore the likelihood of major conflict due to security dilemma factors is low. Nonetheless, further analysis reveals that the impact of the three factors on the offense-defense balance is not uniform. Geography provides the most stable influence while technology, due to its rapidly evolving nature, and allied support, due to its complex nature, need constant attention of the United States in order to maintain the extant relatively stable balance.



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Introduction

Of late, the Asia-Pacific region has become the nodal center of global economic growth with China's economic rise as a major highlight of the story. However, this economic rise has triggered a sense of aggression and exceptionalism in China's behavior. Evidence of such behavior includes its rapid military modernization as well as regular incremental growth in its core interests that aim at expanding its territorial claims. The US has acknowledged the growing importance of the Asia-Pacific region and China's expansionist behavior with its rebalance policy, which in simple terms means that the United States is not ready to give in to China's aggression.

The US, since the Second World War, has enjoyed freedom of navigation in this region without substantial resistance. This situation is changing fast, however, with China's seemingly meteoric rise. China perceives the US presence in the region as a threat to its own expansionist interests, and it has adopted an anti-access/ area denial (A2AD) strategy to deny maneuvering freedom to the US. China has challenged the United States' military and commercial assets in the region on more than one occasion—the EP-3 surveillance aircraft challenged by a PLA fighter in 2001 being a prime example of such a resistance. The US, on its part, is developing concepts that allow it to retain access to the Asia-Pacific region. The US is also committed to the security of many of its allies in the region, which are indeed under direct threat from China.

The growing uncertainty in the region has led to a classic security dilemma. Many questions arise in the backdrop of such an uncertainty such as what are the chances of an armed conflict between the US and China; who has the strategic advantage; will China strike first; and so on. A war between the two giants would clearly disrupt the global order. In order to find answers related to these security dilemma issues in the Asia-Pacific region, I construct a template based on a Cold-War era, structural-realist offense-defense theory. Certain assumptions are made while creating this template to practically incorporate various propositions of the original theory. The created template calls for a means for measuring the offense-defense balance between the two belligerents. This balance is a function of the contribution made by technology, geography, and allied support to both the belligerents. The analysis suggests that at present, the chances of war between the US and China are low because the offense-defense balance is tilted in favor

of defense. However, the balance has a potential to shift in favor of offense, in case the technological and allied factors vary differently in future.

This thesis is divided into five chapters. The first chapter explains various geopolitical flashpoints between the US and China in the Asia-Pacific region. The chapter outlines various conflict of interests, in which the US and China (directly or indirectly) are poised against each other. The second chapter constructs a template based on the offense-defense theory to evaluate the security dilemma issues in the Asia-Pacific region. The third chapter analyzes the intent of China, focusing heavily on its A2AD strategy, and includes measures of the contribution of technology, geography and allies to the offense-defense balance. The fourth chapter repeats this exercise from the US perspective. The fifth chapter draws conclusions and implications from the discussion of earlier chapters.



Chapter 1

Strategic Tensions in the Asia-Pacific Region

As president I have, therefore, made a deliberate and strategic decision: as a Pacific nation, the United States will play a larger and long-term role in shaping this region and its future ... So, let there be no doubt: in the Asia-Pacific in the 21st century, the United States of America is all in.

Barack Obama

China will stick to the road of peaceful development but never give up our legitimate rights and never sacrifice our national core interests... No country should presume that we will engage in trade involving our core interests or that we will swallow the bitter fruit of harming our sovereignty, security or development interests.

Xi Jinping

Introduction

The two quotes mentioned above tell a compelling story. The growing importance of the Asia-Pacific region, a not-so-peaceful rise of China, and a fresh commitment from the United States in the region has created a strained trinity of events. Numerous flashpoints are visible which reveal a heightened possibility of a high-intensity conflict between the top two economies of the world. This chapter aims to explore these flashpoints and ascertain this possibility.

Professor William Tow observes the growing importance of the Asian region in the following manner. “The combination of spectacular regional economic growth, the cultural and regional diversity of its massive population base and the sheer material resources it will generate and consume over the course of this century justify the observation that there is now a broad consensus that the Asian continent is poised to become the new center of gravity in global politics.”¹ A recent United Nations' report on trade and investment confirms this observation. The Asia-Pacific Trade and Investment Report is a recurrent publication prepared by the United Nations Economic and Social

¹ William Tow, *Security Politics in the Asia-Pacific, A Regional-Global Nexus* (New York: Cambridge University Press, 2009), p 1.

Commission for Asia and the Pacific. The 2014 report shows that the Asia-Pacific region remains the most dynamic pole of the global economy.²

The United States has acknowledged this growing importance by enhancing its focus towards the Asia-Pacific region. Secretary Clinton categorically acknowledged this “strategic shift” of interest stating, “The future of politics will be decided in Asia, not Afghanistan or Iraq, and the United States will be right at the center of the action;” and the unfolding Pacific Century will be “America’s Pacific Century.”³ Moreover, China sees the United States presence in the region as a threat. In April 2013, China published a national defense paper indirectly accusing the United States of stirring tensions in the Asia-Pacific region. The paper claimed, “Some country has strengthened its Asia-Pacific military alliances, expanded its military presence in the region, and frequently makes the situation tenser.”⁴ The rest of the chapter explores this tension in detail.

China's Aggression and the US Rebalance

Since 1979, when China first opened up its markets to the world, its average annual GDP has grown at nearly 10 percent per annum, thereby doubling its size every eight years.⁵ In 2013, when compared nominally, China's \$9.5 trillion GDP roughly estimated at 56% of the \$16.75 trillion US economy. However, if the purchasing power parity (PPP) was taken into account, China's economy stood tall at \$16.1 trillion, amounting to 96% of the US economy.⁶ The gap between the two economies is narrowing, and much credit goes to the Chinese efforts in last three decades. China has been aggressively pursuing bilateral trade in the Asia-Pacific region, and currently has free trade agreements (FTAs) with all the ASEAN countries including Taiwan. In December 2012, China joined the 10 members of the ASEAN, Japan, South Korea,

2 United Nations ESCAP, *Asia-Pacific Trade and Investment Report 2014: Recent Trends and Developments*, 24 September 2014, <http://www.unescap.org/resources/asia-pacific-trade-and-investment-report-2014>.

3 Hillary Clinton, “America's Pacific Century,” *Foreign Policy*, 11 October 2011, <http://foreignpolicy.com/2011/10/11/americas-pacific-century.html> (accessed 24 February 2015).

4 Jane Perlez and Chris Buckley, “China Suggests That U.S., Projecting Power, Is Stirring Asia-Pacific Tensions,” *New York Times*, 16 April 2013, <http://www.nytimes.com/2013/04/17/world/asia/china-suggests-us-is-stirring-tensions-in-asia.html>.

5 Wayne M. Morrison, *China's Economic Rise: History, Trends, Challenges, and Implications for the United States*, CRS Report, (Washington, DC: CRS Report, 24 June 2014).p 3.

6 Morrison, *China's Economic Rise*, p 7.

Australia, and New Zealand to begin negotiations towards a Regional Comprehensive Economic Partnership (RCEP), which, if concluded could constitute the world's largest free trade bloc.⁷

Worryingly though, China's economic growth has triggered its expansionist tendencies. The rhetoric of “peaceful rise” has been eclipsed by the reality of its aggressive and assertive behavior.⁸ The most obvious evidence of the Chinese expansionist behavior is the revision of its “core interests.”⁹ Until 2009, Taiwan, Tibet and Xinjiang had been pronounced as China's core interests. In 2010, these interests were extended to China's sovereignty over much of the South China Sea. In 2012, the Japan-administered Senkaku Islands were added to the list. Coherently, the actions are speaking louder than words. PLA continues to modernize rapidly supported by two decades of military spending. China's defense budget has also been growing at a steady rate of 10% successively. Among Chinese weapon programs of concern to the United States has been the effort to develop “carrier-killer” anti-ship ballistic missile (ASBM) known as the DF-21D. China has also carried out test flights of a next-generation stealth fighter aircraft, the J-20, acquired Kilo-class non-nuclear submarines from Russia, and deployed several indigenously built destroyers and frigates. The Pentagon report to Congress predicts that China's first indigenously produced carrier could be operational by 2015.¹⁰ The rapidity of military modernization has increased uncertainty in the region. U.S Department of Defense has highlighted this uncertainty by stating that, “The growth of China's military power must be accompanied by greater clarity of its strategic intentions in order to avoid causing friction in the region.”¹¹

7 Morrison, *China's Economic Rise*, p 24.

8 The term, “peaceful rise,” was first used by Zheng Bijan, the then Vice Principal of the Central Party School of the Communist Party of China at a speech at Boao Forum for Asia. Ha Anh Tuan, “China's South China Sea Play: The End of Beijing's “Peaceful Rise”?”, *The National Interest*, 19 May 2014, <http://nationalinterest.org/blog/the-buzz/chinas-south-china-sea-play-the-end-beijings-peaceful-rise-10489>.

9 Amb. Hemant Krishan Singh, *South China Sea in Regional Politics*, Conference Paper at Center for Strategic and International Studies, 05 June 2013, p 3, <http://csis.org/event/managing-tensions-south-china-sea>.

10 Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving People's Republic of China 2012*, May 2012, pp 21-22, http://www.defense.gov/pub/pdfs/2012_CMPR_final.pdf.

11 Susan V. Lawrence, *U.S.-China Relations: Policy Issues*, (Washington, DC: CRS Report, 02 August 2012) p 10.

As stated earlier, Chinese economic and military aggressiveness has obliged the United States to shift its focus towards the Asia-Pacific region. The Obama Administration's new policy of strategic shift towards Asia, which was initially called a strategic "pivot," and later a "rebalance," is widely viewed as an attempt to counter-balance China.¹² The United States' rebalancing act has its distinct economic and military components. Trans Pacific Partnership (TPP) forms the most vital tool of the economic component. When negotiations are complete, TPP would be the largest trade deal in history, involving twelve countries from the Asia-Pacific region, and accounting for 40% of the world economy.¹³ If successful, a broadly based TPP could provide the United States with a number of economic and strategic benefits. The trade agreement would enhance US access to the growing markets of Asia, help stimulate the growth in US exports, and foster an economic recovery, while enhancing the protection of US intellectual property rights.¹⁴ Above all, the new treaty will balance the Chinese forceful economic engagements in the region. Besides such ambitious projects, the Obama administration has also engaged the East Asian nations through regional forums like East Asia Summit. In November 2012, President Obama led a highly effective visit to Thailand, Myanmar and Cambodia, where he attended the fourth ASEAN-US Leaders' Meeting and the seventh East Asia Summit.¹⁵

The military component of the rebalancing involves the use of force to ensure extended-deterrence for the United States in the region. Military budget and force structure has been accordingly shaped in the recent past. Notwithstanding reductions in the planned levels of the US defense spending resulting from Budget Control Act of 2011, the United States intends to maintain and strengthen its military presence in the

12 Mark Manyin, *Pivot to the Pacific? The Obama Administration's "Rebalancing" Towards Asia*, (Washington, DC: CRS Report, 28 March 2012) p 1.

13 Lydia DePillis, "Everything you need to know about the Trans Pacific Partnership," *The Washington Post*, 11 December 2013, <http://www.washingtonpost.com/blogs/wonkblog/wp/2013/12/11/everything-you-need-to-know-about-the-trans-pacific-partnership/>.

14 Mark Manyin, *Pivot to the Pacific? The Obama Administration's "Rebalancing" Towards Asia*, (Washington, DC: CRS Report, 28 March 2012) p 21.

15 Ernest Z. Bower, "The ASEAN and East Asia Summits: U.S. Walks Softly While China Wields a Big Stick," *csis.org*, 21 November 2012, <http://csis.org/publication/asean-and-east-asia-summits-us-walks-softly-while-china-wields-big-stick>.

region. The US Navy deployments will rise from 52 warships to 62 by 2020.¹⁶ President Obama emphasized this point during his November 2011 speech in the Australian Parliament: “As we consider the future of our armed forces, we've begun a review that will identify our most important strategic interests and guide our defense priorities and spending over the coming decade. So here is what the region must know. As we end today's wars, I have directed my national security team to make our presence and mission in the Asia Pacific a top priority. *As a result, reduction in U.S. defense spending will not—I repeat, will not—come at the expense of the Asia Pacific.* [emphasis added]”¹⁷

In accord with these sentiments, the DOD has proposed to continue with the deployment of 11 aircraft carriers and reemphasized effort to defeat the “Anti-access/Area Denial” strategies, which are known to be a focus for China's military.¹⁸ The following sections of the chapter describe this tension in more detail, and establish the possibility of a high intensity conflict in the region.

China-Taiwan dispute and the United States

The fight for Taiwan is a direct confrontational issue between China and the United States. It has been a sticky issue between both countries for over six decades. China has avowed to reunite with Taiwan, and use force if necessary to achieve this goal. The two domestic political parties in Taiwan, namely, the Democratic Progressive Party (DPP) and the Kuomintang (KMT), stand for independence and maintaining status quo respectively. In the year 2000, the fifty-year rule of KMT ended after DPP was elected to power. The DPP pushed for Taiwan independence in a radical manner after attaining power. China responded furiously to the DPP's move by adopting an Anti-Secession Law in 2005, in which China laid down the condition under which it would use force against Taiwan.¹⁹

16 Amb. Hemant Krishan Singh, *South China Sea in Regional Politics*, Conference Paper at Center for Strategic and International Studies, 05 June 2013, p 5, <http://csis.org/event/managing-tensions-south-china-sea>.

17 Mark Manyin, *Pivot to the Pacific? The Obama Administration's “Rebalancing” Towards Asia*, (Washington, DC: CRS Report, 28 March 2012) p 11.

18 Manyin, *Pivot to the Pacific?*, p 4

19 China Anti-Secession Law of 2005, <http://www.china.org.cn/english/2005lh/122724.html> (accessed 25 February 2015).

In 2003, worried with the DPP's reckless behavior, President George W. Bush put a warning to the leaders of the two sides that neither should take unilateral action to alter the status of Taiwan. Bush's administration warned the Chinese leaders that they should not use force to coerce unification, or the United States would intervene.²⁰ The DPP-driven tensions culminated in 2008, with the KMT regaining control of Taiwan government in both presidential and legislative elections. The KMT stands for eventual unification with China, but insists that the unification should take place under democratic rules, and more specifically, when Chinese government becomes a democracy. Though China responded positively to the KMT's call, the U.S. Strategic shift has raised concerns that the DPP might misread the United States' move as a step to promote democracy in Taiwan. On the economic front, China is concerned that Taiwan may push for the membership in US-led TPP. This would allow another support for its quest for statehood. On the military front, China is afraid that DPP may push for closer military cooperation with the United States. It is noteworthy that the sale of arms under the Taiwan Relations Act (TRA, U.S. Public Law 96-8) has been a major point of contention between China and the United States since the act came into effect in 1979. Of particular relevance for long-term U.S. policy are Section 2 (b) and Section 3 of the TRA, dealing with U.S. strategic interests in arms sales commitments to Taiwan. Section 2 of the TRA speaks in broad terms about U.S. interests for peaceful resolution to the Taiwan question, saying that any forceful resolution would be of "grave concern to the United States." Section 3 provides for the sale of US defense articles and services to Taiwan, but is non-specific about the nature.²¹ The US-China dialogue on arms sale has never gone beyond irreconcilable quarrels over the years.

US-China conflict over the Exclusive Economic Zone

The US Military activities in the Chinese-claimed EEZ are another source of conflict between the two nations. Both sides hold opposing views on the legal and practical nature of the US military activities in the area. China argues that the UN Convention on the Law of the Sea (UNCLOS) has established the 200-nm EEZ between

20 John King, "Blunt Bush Message for Taiwan," *CNN Washington Bureau*, 09 December 2003, <http://www.cnn.com/2003/ALLPOLITICS/12/09/bush.china.taiwan/html> (accessed 25 February 2015)

21 Kerry Dumbaugh, *Taiwan: Texts of the Taiwan Relations Act, the U.S. - China Communiqués, and the "Six Assurances"*, (Washington, DC: CRS Report, 13 July 1998) pp 94-96.

territorial water zone and the high seas as a special area governed by its own rules. China also holds that freedom of navigation and over-flight in the EEZ have certain restrictions, namely, the activities must be peaceful and non-threatening to the coastal nations. China charges that US military surveillance ships and reconnaissance flights in the Chinese-claimed EEZ have hostile intent against China; and their actions therefore do not fall in the scope of peaceful and innocent passages.²² The United States on the other hand rejects Chinese claims insisting that China misinterprets the UNCLOS, and asserts that the sanctions are restricted to a distance of 12-nm territorial waters, and not the EEZ.²³ The difference in opinion has manifested in minor military confrontations between the two nations in the region. The earliest and most notable confrontation so far was the collision of a U.S. EP-3 surveillance plane with a PLA fighter jet about 70 miles off China's southern coast over the South China Sea on 01 April 2001. After surviving the near-fatal accident, the U.S. crew had to make an emergency landing of their damaged plane onto PLA's Lingshui airfield on Hainan Island, and the PRC detained the 24-crew members for 11 days.²⁴ Since then, China and the United States have continued to clash in the South and East China Seas. On 08 March 2009, in an incident, five Chinese ships harassed USNS *Impeccable*—an unarmed military sealift Command vessel—in the South China Sea. The United States protested against the Chinese activity to China's foreign ministry in Beijing and to the defense attaché at the Chinese Embassy. China rejected the U.S. protests maintaining that USNS *Impeccable* violated international law by sailing in the area.²⁵ In addition to clashes over the surveillance ships, China has also opposed to the US aircraft carrier group conducting military exercises in the Yellow Sea and its occasionally transiting the Taiwan Strait.²⁶

22 Ma Chaoxu, "Chinese Foreign Ministry Spokesperson Press Remarks," *Xinhua News Agency*, 06 May 2009, <https://www.yumpu.com/en/document/view/26800619/asia-pacific-a-strategic-assessment-strategic-studies-institute-/91>.

23 Captain Raul Pedrozo, JAGC, USN, "Close Encounters at Sea," *Naval War College Review*, Vol 62, No.3 Summer 2009 .<https://www.usnwc.edu/getattachment/d11a2362-fa30-4742-8ec4-c8bed2025114/Close-Encounters-at-Sea--The-USNS-Impeccable-Incid.aspx>.

24 Eric Donnelly, "The United States-China EP-3 Incident Legality and Realpolitik," *Journal of Conflict & Security Law*, Vol 9, No.1, 2004, pp 25-52.

25 Jim Garamone, "Chinese Vessels Shadow, Harass Unarmed U.S. Surveillance Ship," www.navy.mil, 10 March 2009, http://www.navy.mil/submit/display.asp?story_id=43328

26 "Chinese Ask U.S. Military to Stop Surveillance in China's Exclusive Economic Zone: *People Daily*, 28 August 2009, <https://www.usnwc.edu/Research---Gaming/China-Maritime-Studies->

China-Japan disputes and the United States

China and Japan have two maritime disputes in the East China Sea. One is about the delimitation of the two nation's maritime boundary; the other is related to sovereignty of the Senkaku/ Diaoyu Islands. In the recent past, both disputes have resulted in confrontations between the two nations, and indirectly challenged the United States' commitment towards Japan.

The first issue relates to the EEZ limits between the two nations. China and Japan are maritime neighbors on the two sides of the East China Sea, with distance between them varying from 360 nm at the widest stretch in the north to 200 nm at the narrowest in the south. There was no maritime boundary between the two nations for centuries; however, with introduction of the United Nation Convention on the Law of the Sea (UNCLOS) in 1994, it became necessary to establish dividing line between the shared waters. In 1996, Japan unilaterally promulgated a maritime law and claimed a 200 nm EEZ all around Japan, and asserted the use of meridian lines to delimitate overlapping claims with China.²⁷ Though China adopted its own act in 1998 claiming 200 nm EEZ along its coastlines, it objected that its continental shelf extended all the way up to Okinawa Trough, and therefore it should be allowed to further extend its claim to the western edge of the Okinawa Trough.²⁸ Moreover, China took Japan's assertion as a unilateral act and therefore dismissed it altogether.

The second issue is equally controversial. The Senkaku/Diaoyu Islands consist of three tiny uninhabited islands and five barren rocks that are barely visible on the ocean surface. However, with recent studies speculating that the East China Sea has large fossil deposits, the importance of these islands has suddenly increased. The nation controlling these islands would have access to sizeable portions of undersea natural resources.²⁹ China claims that Chinese were the first to discover these islands; its fisherman came to these islands regularly, and its envoys made frequent stops at those islands until Japan

Institute/Publications/documents/China-Maritime-Study-7_Military-Activities-in-the-.pdf.

27 Japan, *Law on the Exclusive Economic Zone and the Continental Shelf* (Law No.74 of 1996), available at <http://faolex.fao.org/docs/pdf/jap13392.pdf>.

28 China, *Exclusive Economic Zone and Continental Shelf Act*, 26 June 1998, at http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/chn_1998_eez_act.pdf.

29 For topography and geology of the Senkau Islands, see reports from OPRF Center for Island Studies, visit <http://islandstudies.oprf-info.org/>.

conquered them. China has never exercised control over these islands, while Japan has officially taken over these islands from 1895 to 1945, and then since 1972. Japan does not accept that any territorial dispute exists over Senkaku Islands, and claims that they are integral part of its sovereignty.³⁰ China on its part has been regularly intruding in the 12 nm territorial water zone around these Islands, and intimidating Japanese Coast Guard ships to leave from these water zones.³¹

The United States has stuck to a stance that it takes no position in the territorial dispute, and insists that the dispute should be resolved peacefully. However, it also maintains that if Japan were to be attacked because of this dispute, the United States would honor its obligation to the existing mutual defense treaty. In April 2014, at the start of his Asia visit, U.S. President Barack Obama reassured Japanese Prime Minister Shinzo Abe in a joint press conference stating that: “Our commitment to Japan's security is absolute and article five [of the security treaty] covers all territories under Japan's administration, including the Senkaku islands.”³²

South China Sea Maritime Disputes and the United States

The South China Sea encompasses a portion of the South Pacific from southern tip of Taiwan to the Strait of Malacca. The area includes numerous small islands, rocks, and reefs. It scatters roughly around the four island groups known as the Pratas in the northeast, the Maccelfield Bank in the middle, the Paracel Islands in the west, and Sparty Islands in the South. China has a long history of fishing in the area surrounding these islands. Arguably, China was the first country to assign names to these islands and use them as navigational references.³³ For centuries, the Chinese took it for granted that their historical reach established their ownership over those islands. This arrangement was not problematic during the Middle Kingdom, as it was powerful and its influence on its surroundings areas was strong. However, after the dynasty decline, foreign powers

30 Official view of Japan is provided by the Ministry of Foreign Affairs of Japan, available at <http://www.mofa.go.jp/region/asia-paci/senkaku/>.

31 For statistical information on Chinese intrusions in the Senkaku islands, see http://www.mofa.go.jp/region/page23e_000021.html.

32 Justin McCurry and Tania Branigan, “Obama says US will defend Japan in island dispute with China,” *The Guardian*, 24 April 2014, <http://www.theguardian.com/world/2014/apr/24/obama-in-japan-backs-status-quo-in-island-dispute-with-china>.

33 Jianming Shen, “China's Sovereignty over the South China Sea Islands: A Historical Perspective,” *Chinese JIL*, 2002, p 98, <http://chinesejil.oxfordjournals.org/content/1/1/94.full.pdf>.

occupied these islands. Taiwan and its surrounding islands were ceded to Japan; the South China Sea islands fell under the control of Europeans. Incidentally, the Spratly and the Pratas Islands were both renamed after the British sailors. At the end of World War II, Japan complied with the Postdam Proclamation, and relinquished all the territories, which it had acquired during its imperial expansion per the San Francisco Peace Conference held in 1951. China did not participate in the conference, but Premier Zhou Enlai denounced the peace treaty, and reiterated its claim to Taiwan, its surrounding islands, and all of the South China Sea islands.³⁴ However, even then China made no effort to take control of these islands, while Vietnam and the Philippines continued their efforts to undertake activities in the disputed area. Finally, the probability theory of fossil fuels and natural gas in the region, along with the formulation of UNCLOS limits in 1980s, made the littoral nations scramble for occupying these islands. The struggle continued into the 1990s and eventually rested with disputed islands as follows. The Pratas Islands completely occupied by Taiwan, but disputed by China; the Paracel Islands mostly occupied by China, but disputed by Vietnam; the Macclesfield Bank and Scarborough Shoal disputed among China, Taiwan and the Philippines; and the Spratly Islands disputed among China, Vietnam, Taiwan, the Philippines, Malaysia, and Brunei.³⁵ Since then, the disputants have been engaged in various confrontations.

Recent examples of confrontations include a protracted standoff between China and the Philippines in spring and summer of 2012 over the Scarborough shoal. The confrontation that began with the Philippines sending a warship to confront Chinese fishing boats near the shoal was a follow-up of a series of standoffs in 2011. Similarly, Vietnam and China have also been involved in standoffs over disputed islands in the recent past. In June 2012, Vietnam passed a law-claiming jurisdiction over the Paracels and Spartlys Islands. On the same day, China announced the establishment of a new city on an island in the Paracels chain.³⁶

34 Jianming Shen, "China's Sovereignty over the South China Sea Islands: A Historical Perspective," *Chinese JIL*, 2002, p 98, <http://chinesejil.oxfordjournals.org/content/1/1/94.full.pdf>.

35 David Lai, "Asia-Pacific: A Strategic Assessment," (Pennsylvania: SSI and U.S. Army War College Press, 2013) p 61.

36 Susan V.Lawrence, *U.S.-China Relations: Policy Issues*, (Washington, DC: CRS Report, 02 August 2012) p 12.

While dealing with its neighboring disputants, China has always tried to prevent the United States from getting involved. Throughout the years, China has been very suspicious and sensitive to the U.S. position on the South China Sea disputes. The US has two principal interests in the South China Sea: access and stability. Although the U.S. does not take a position on the underlying claims to sovereignty, it has increased its involvement in the disputes with an emphasis on the peaceful management of claims. The tensions in the region are more than ever before.

Conclusion

This chapter highlighted the areas of conflict between China and the United States. China's rise cannot be considered peaceful anymore. Its aggressive and assertive behavior reflects a sense of exceptionalism and expansionism. Recognizing the strategic importance of the Asia-Pacific region, and freed from the recent engagements in Iraq and Afghanistan, the United States has responded to China's behavior with its rebalancing act. Hence the two nations are poised (directly and indirectly) to compete and assert their position in this region. For better or for worse, the US-China relationship is becoming a defining one in the Asia-Pacific region.

For the United States, the dilemma is how to uphold the regional order in Asia-Pacific while not emboldening China and China's disputants to take reckless acts against each other. For China, its dilemma is when and how to settle its territorial disputes. The future is filled with uncertainty. A small reckless act can quickly escalate into a high intensity conflict. While China has not fought a war for quite some time, it has noted the strengths and weaknesses of the U.S. forces from its performance in Gulf War, and prepared its strategy based upon certain assumptions. China's military modernization is aimed to pursue a strategy of anti-access/area-denial, which prevents a foreign force from exerting influence in a region. The US, on its part, has its own military strategy in place to counter China.

In 2012, the Pentagon described China's military modernization program as efforts aimed at "improving the PLA's capacity to conduct high-intensity, regional military operations, including counter-intervention operations."³⁷ In response to these

³⁷ Susan V. Lawrence, *U.S.-China Relations: Policy Issues*, (Washington, DC: CRS Report, 02 August

capabilities, DOD proposed, “The United States must maintain its ability to project power in areas in which our access and freedom to operate are challenged... *Accordingly, the U.S. military will invest as required to ensure its ability to operate effectively in anti-access and area denial (A2/AD) environments* (emphasis original).”³⁸

The next chapter aims at creating a theoretical template that would answer our questions about the uncertainty in the Asia-Pacific region.



2012) p 9.

38 U.S Department of Defense, “*Sustaining Global Leadership: Priorities for 21st Century Defense*,” (Washington, DC: Government Printing Press, 2012), p 4.

Chapter 2

A Theoretical Discussion on the Offense-Defense Theory

Introduction

The previous chapter delineated the strategic tensions between China and the US in the Asia-Pacific region. The US has responded to China's assertive and expansionist behavior with its rebalancing effort. What will happen next? How fragile is the security situation in the region? Is there a possibility of war? Does China see advantage in striking first? Who has the strategic advantage? How strong is the alliance formation? This chapter comprises a construct to answers these questions. I begin with a set of propositions from the offense-defense theory and show that if the intent of a state can be discerned based upon a state's military strategies and foreign policy (a function of action and words), then by calculating the offense-defense balance, we can achieve reasonable answers to all of the aforementioned questions.

The simplest portrayal of the offense-defense theoretical position is that states with purely defensive capabilities are unable to initiate an attack. If all states are defensive only, then war is extremely inefficient if not entirely impossible. On the other hand, states with purely offensive capabilities are ill-equipped to ward off or defend from a concerted attack, and will have an incentive to strike first (thus avoiding potential damage). Moreover, the offensive-only state may logically deduce that it can achieve more resources, territory, and the like if it *uses* its offensive capability to expand. The defensive-only state will logically deduce that since it cannot expand or increase its power through military adventurism, its best option is to conserve its military resources by *avoiding* war.

Thus, a structural realist offense-defense theory simply states that whenever offense has an advantage, the chances of war are high. In addition, the theory has two critical intervening variables. First, whether defensive weapons can be distinguished from the offensive ones, and second, whether offense-defense balance can be measured.¹ These two variables have been a point of contention since the inception of this theory. Intellectuals hold different opinions on these as their interpretation changes as a function

1 Robert Jervis, "Cooperation under the Security Dilemma," *World Politics*, Vol 30, No 2 (January 1978), pp. 187-194.

of the assumptions made to test the theory. The main purpose of this chapter is to provide clarity on these assumptions in the described context. The second aim is to lay out a template that is tested in subsequent chapters.

Security Dilemma and Offense-Defense Theory

Before delving more fully into offense-defense theory, it is essential to define another foundational term—Security Dilemma. The international system, in a realist discussion, is anarchic. This simply means there is no world government that has the legitimate right or power to force a state to comply with international rules or norms. Thus, all sovereign states resort to self-help; relying on their own internal power or external alliances to ensure their security.² Robert Jervis claims this aspect of the security dilemma is the key to understanding how in an anarchic international system states with common goals end up in competition and war. Specifically, he describes a situation when “many of the means by which a state tries to increase its security decrease the security of others.”³ For example, if a state tries to strengthen its security by increasing its force size or by acquiring superior weapons, the other state sees this defensive behavior as a threat, and increases its own security measures in response. The first state perceives the reaction as an attempt to overcome its purely defensive intent, and again increases its capabilities, which causes another reaction from the second state, and so on. Eventually, both states are heavily armed and highly distrustful of the other, a vicious cycle that more likely culminates in war than a stable peace. Contrasting international from domestic security, Jervis explains that while there are several ways to increase the safety of one's domestic property without endangering the other's security, a similar logic does not hold good for international security. To enhance personal security, an individual can move to a safer neighborhood, put bars on the windows, avoid dark streets, and keep distance from suspicious looking characters; however, in international politics, one state's gain in security measures inadvertently and inevitably threaten the others.⁴ Therefore, every state

2 On assumptions of realism, see Kenneth N. Waltz, *Theory of International Politics* (Boston: McGraw Hill, 1979), pp. 102-116.

3 Robert Jervis, “Cooperation under the Security Dilemma,” *World Politics*, Vol 30, No 2 (January 1978), p. 169.

4 Robert Jervis, “Cooperation under the Security Dilemma,” *World Politics*, Vol 30, No 2 (January 1978), p. 170.

is always suspicious of the other state's security. The offense-defense theory thus builds on the security dilemma—when states out of fear, lack of trust, and uncertainty prepare for the worst-case situation, any gain in offensive advantage will worsen the security dilemma and increase the likelihood of war.

The First Variable of the Offense-Defense Theory—Distinction

As mentioned earlier, the offense-defense theory has two intervening variables that govern its explanatory power—Distinction and Measurability. The first variable—Distinction—questions, whether an offensive weapon can be differentiated from a defensive one. This distinction has been a point of contention between the theorists. Critics of the offense-defense theory often claim that such distinction is not plausible. Colin Gray argues, “Even the most apparently defensive of weapons and military architectural forms may be employed for offensive purposes.”⁵ John Mearsheimer, supports this critique and writes, “I do not think weapons can be usefully categorized as either offensive or defensive. Tanks, for example, can provide the mobility and firepower necessary for deep offensive penetrations, and be used as a defensive weapon necessary to respond to attacks at various points along a defensive perimeter. Between 1943 and 1945, Germany employed its tank forces defensively to delay and impose heavy costs on advancing Soviet forces on the eastern front.”⁶ Based on such logic, critics of the offense-defense theory render it as futile.

On the other hand, the proponents of the theory argue that distinction between offensive and defensive weapons is possible. Samuel Huntington is one such proponent. Even while arguing that it is impossible to draw a clear distinction between offensive and defensive *weapons*, he asserts that offensive and defensive military capabilities, military strategies, and overall foreign policy goals *can* be distinguished as offensive or defensive.⁷ Taking a different approach on Mearsheimer’s tank analogy, Huntington argues that some weapons make offensive action easier and less costly than others do. Tanks are indeed useful for offensive and defensive purposes, but without tanks,

5 Colin Gray, “New Weapons and the Resort to Force,” *International Journal*, Vol 30 No 2 (Spring 1975), pp. 238-258.

6 John J. Mearsheimer, *Conventional Deterrence*, (New York: Cornell University Press, 1985) p. 26.

7 Samuel Huntington, “Conventional Deterrence and Conventional Retaliation in Europe,” *International Security* Vol 8 No 3 (Winter 1983-84), pp. 32-56.

blitzkrieg offenses would be virtually impossible. John Mearsheimer agrees here—tanks “led to a fundamental change in the nature of the battlefield,” when they were used in support of a *blitzkrieg* strategy.⁸

Fundamentally, it is not weapons but the political *intent* that makes a weapon defensive or offensive. This political intent, then transforms into military capabilities and strategies. Most critics who argue that it is not possible to draw a distinction between the offensive and defensive weapons overlook the intent of a state that possesses these weapons. For example, in WW II, Hitler’s offensive intentions led him to prefer a high percentage of bomber aircraft in its force mix, while British politicians, generally acknowledging the slow decline of its empire, manifested an overall defensive intent, thus supporting a force mix heavily weighted to aircraft as interceptors. It was the political intent, which made military weapons offensive or defensive. Since foreign policies and military strategies *are* discernible, intent is presented here as a function of words and actions. For example, when a state through its words and action proves that its increase in military capabilities is aimed at protecting its sovereignty, and not meant for territorial gains, the intent is defensive. However, when a state increases its military capabilities, while declaring that it seeks some territorial gains out of those military capabilities, the intent is offensive.

Second Variable—Measurability of the Offense-Defense Balance

The second intervening variable of the offense-defense theory is the measurability of the offense-defense balance. The thought behind this measurement is that once the intent of the two belligerents is clear, and now if the balance between offense and defense can be measured, then it is possible to answer the questions related to security dilemma. Therefore, for the offense-defense theorists, offense-defense balance is a strong indicator of stability/instability in an international security situation. Anytime the balance is in favor of offense, then fear of attack increases the security dilemma, and war is more likely. Similarly, if the defense holds the advantage, then fear of attack decreases the security dilemma, and war is less likely. Offense-defense balance is essentially an economic argument, and various theorists have defined it in different ways. Robert

⁸ John J. Mearsheimer, *Conventional Deterrence*, pp. 26-27.

Gilpin, for example, states that offense-defense balance is “a relative rather than an absolute matter,” and in this balance, “offense has an advantage when fewer resources must be expended on the offense in order to overcome the defense.”⁹ In terms of value, “offense is said to be superior if the cost of conquest is less than the value of territory.”¹⁰

Robert Jervis defines the balance similarly: “when we say that offense has the advantage, it means that it is easier to destroy other's forces and take its territory than it is to defend. When the defense has the advantage, it is easier to protect, and to hold, than it is to move forward, destroy, and take.”¹¹ In terms of incentive, “when there is an incentive to invest in offensive military capabilities rather than defensive military capabilities, then offense has the advantage. If each dollar spent on offense can overcome, each dollar spent on defense, and if both sides have the same defense budgets, then both are likely to build offensive forces and find it attractive to attack rather than to wait for the adversary to strike.”¹² To illustrate these two thoughts with an example, if a state must invest \$6- billion in military capabilities in order to mount a successful offensive against an adversary who has invested \$2 billion, and adopts a defensive strategy, then the offense-defense balance is 3:1. It will take the aggressor thrice the capability to mount a successful offensive, and it will take the defender at least one-third the capability of the aggressor to prevent a war.

For the discussion, the offense-defense imbalance is defined as a *ratio* of the offensive to defensive military advantage. Therefore, if a defender has X military advantage, and the attacker has Y military advantage, then the offense-defense balance is the ratio of Y/X. Larger ratio indicate a balance in favor of offense. Further, the military advantage is calculated as a function of three variables: geography, technology, and military alliance. These three factors have been chosen from the offense-defense theory, and will be discussed in further sections.

9 Robert Gilpin, *War and Change in International Politics* (Cambridge: Cambridge University Press, 1981), pp. 62-63.

10 Robert Gilpin, *War and Change in International Politics* pp. 62-63.

11 Robert Jervis, “Cooperation under the Security Dilemma,” p. 188.

12 Robert Jervis, “Cooperation under the Security Dilemma,” p. 188.

The Nuclear Option

Yet another critique of the offense-defense theory is based on nuclear weapons. Critics argue that the theory does not apply between two nuclear-armed states because even a weaker state can offset the conventional advantage of the stronger nation with its nuclear weapons. Robert Jervis claims that the nuclear deterrence made assured retaliation military strategy a very efficient route to security.¹³ It is therefore not possible to calculate the offensive advantage between two nuclear-armed nations.

While it is true that nuclear deterrence has made the international security environment stable, there are limits to this proposition. A careful look at the history indicates that a conventional war between two nuclear-armed states is possible, provided the political aims are limited and clearly expressed. An example of such conflict is the Kargil War (1999) between India and Pakistan. In other words, limited wars can be fought under a nuclear umbrella. Corbett reflects this thought of limited wars in his book, *Some Principles of Maritime Strategy*, by distinguishing the nature of wars based on “importance of political object,” and “level of vigor.”¹⁴ He explains that “there might be a limit beyond which it would be bad policy to spend that vigor, a point at which, long before force was exhausted or even fully developed, it would be wiser to abandon your object rather than to spend more upon it.”¹⁵ Along the same note, painting a hypothetical scenario of the Cold War era, Kenneth Waltz questions, “What would we expect the United States to do if the Soviet Union should launch a major conventional attack against vital American interests in Western Europe?” He replies himself: “military actions have to be related to an objective, and it would be preposterous to think that the United States would reply such an attack by striking hundreds of Soviet cities.”¹⁶ Such is an assumption in our discussion.

Therefore, the nuclear option provides an unquestionable stability between two nuclear-armed states, provided the survival of a sovereign state is in question. When such is not the case, for example a conflict takes place outside the sovereign boundaries of a

13 Robert Jervis, “Cooperation under the Security Dilemma,” p. 206.

14 Julian Corbett, *Some Principles of Maritime Strategy* (Newport, RI: Naval Institute Press, 1988), p. 43.

15 Julian Corbett, *Some Principles of Maritime Strategy*, p. 43.

16 Kenneth Waltz, “Nuclear Myths and Political Realities,” in *The Use of Force*, ed. Robert Art and Kenneth Waltz (Lanham, MD: Rowman & Littlefield Publishers, 2009), p. 118.

state for limited aims; I can assume for this discussion that nuclear war possibility is remote. With the nuclear caveat explained, at this point it is useful to inject the three primary conventional variables of offense-defense balance.

Offense-Defense Balance and Technology

Technology plays an important role in determining the offense-defense balance, however, technology by itself, is not biased towards the aggressor or the defender. The aggressors and defenders use technology to support their intents, and thereby affect the offense-defense balance. Charles Glasser and Chaim Kaufmann point out that “the offense-defense impact of a specific weapon or technological innovation cannot be simply assessed by its performance properties in isolation; rather we must assess its impact on states' abilities to perform offensive and defensive mission.”¹⁷ For example, in medieval centuries, strong fortification techniques bolstered defense, and innovative methods of siege warfare strengthened offense.¹⁸ Similarly, the aggressors used advances in military mobility like chariots, horse cavalry, tanks, motor trucks, aircraft, and mobile bridging equipment to pursue their goals, while the defenders used major counter-mobility innovations such as moats, barbed wire, tank traps, and land mines to ensure defense.¹⁹ In more recent era, Glasser and Kauffman claim “Railroads, which depend on elaborate networks of infrastructure, and which can easily be destroyed by retreating defenders but which cannot be extended quickly by the aggressors, are much more useful to forces operating in friendly controlled territory than they are to advancing forces. Thus they favor defense in comparison with motor trucks or helicopters, which require less infrastructure and so can more easily operate at or near the spearhead of an advance.”²⁰ Therefore, one technological innovation, shaped by an offensive intent, is offset by another innovation shaped by a defensive intent. In essence, the intents shaped the technology, and not the other way around.

17 Charles Glasser and Chaim Kaufmann, “What is the offense-defense balance and can we measure it? (Offense, Defense, and International Politics),” *International Security*, Vol 22 No 4 (Spring 1988) p. 7.

18 Lise Hull, “Medieval Warfare:How to Captur a Castle with Siegecraft, *The Quarterly Journal of Military History* (Spring 2004), <http://www.historynet.com/medieval-warfare-how-to-capture-a-castle-with-siegecraft.html>.

19 Van Evera, “Offense, Defense, and the Causes of War,” *International Security*, Vol 22, No 4(Spring 1998) p. 16.

20 Glasser and Kaufmann, “What is the offense-defense balance and can we measure it?” p. 8.

In modern warfare, technological innovations including cyber, space, and both missile and anti-missile capabilities have added a new dimension to the assessment of offense-defense balance, but the essential or underlying logic remains same. For example, ISR (Intelligence, Surveillance, and Reconnaissance) technology is neither offensive nor defensive; it is the intent, or the strategy it supports that makes it offensive or defensive. All ISR does is reduce the fog of war by trying to eliminate element of surprise (on the defensive side) or monitor opponents' capabilities and movements so as to develop a plan to defeat them in detail (on the offensive side). Technological advances in modern warfare have also blurred the lines *between* technology and weapons—technology itself has become a potent weapon. Cyber is a case in point. In modern era, cyber technology is capable of carrying out many of the functions that a kinetic weapon did in earlier times. For example, till recently, strike aircraft targeted electricity grids with bombs and missiles to achieve strategic effects, which can now be attacked with cyber technology alone. A recent example of cyber technology being used as a weapon comes from Operation Orchard. On the night of 06 September 2007, Israeli fighter aircrafts destroyed the Syrian nuclear weapons plant in an air strike. None of the Syrian radars picked up the intruding strike. Allegedly, the Syrian radar computers were compromised using cyber technology, which resulted in radar screen painting a blank picture, despite the fighter aircraft violating the airspace.²¹ Therefore, instead of physically destroying a radar site to avoid detection, the aggressors employed cyber technology as a weapon.

To summarize, technology by itself is neither offensive nor defensive. It supports offensive and defensive intents. The offense-defense balance tilts in favor of the state whose intent is better supported by advancing technology. In modern times, the distinction between technology and weapon is rapidly reducing.

Offense-Defense Balance and Geography

The second most discussed variable of the offense-defense balance is geography. Geographical factors such as distance to the conflict zone, presence or absence of major physical barriers, buffer zones, shapes of borders affect the measurement of the offense-defense balance. Stephen Van Evera, in his article *Offense, Defense, and the Causes of*

²¹ Richard Clarke, *Cyber War*, (New York: Harper Collin Publishers, 2010) pp 5-7.

War, while describing the role of geography in offense-defense balance writes, “Conquest is harder when geography insulates states from invasion or strangulation. Hence, conquest is hindered when natural borders coincide with oceans, lakes, mountains, wide rivers, dense jungles or other natural barriers that impede offensive movement or give defenders natural strong points. Conquest is also hindered when states are self-sufficient in supplies of water, energy, food, and critical raw materials, or when trade routes cannot be severed by land or sea blockade.”²² Comparing Israeli and US geography, he asserts that Israel's small territory, land locked nature, and dependent economy makes it naturally vulnerable to attacks, whereas the United States with its vast size, ocean-barriers on both sides, and independent economy is blessed with a very defensible geography. Highlighting the importance of geography in the security dilemma, Jervis writes: “anything that increases the amount of ground a belligerent has to cross, or impedes his progress, or makes him vulnerable while crossing, increases the advantage of the other. When barriers that produce such effects separate the states, the security dilemma is reduced, since both can have forces adequate for defense without being able to attack.”²³ The range of Himalayas in the Indo-China context is one such example. Buffer zones also slow the attacker's progress; they give defender the time to prepare increase opponent's problems of logistics; and reduce the number of soldiers for final assault. For example, when Persia was being divided into Russian and British spheres of influence, the Russians sought assurances that the British would refrain from building potentially menacing railroads in what it considered its sphere of influence.²⁴ Indeed, since railroad construction radically altered the abilities of countries to defend themselves and to attack others, many diplomatic and intelligence activities in the late nineteenth century centered on this subject.²⁵ Geography at the borders of nations also affects the offense-defense balance. Jervis clarifies: “Although geography cannot be changed to conform to borders, borders can change to conform to geography. Borders across which attack is easy tend to be unstable. States living within them are like to expand or to be

22 Van Evera, “Offense, Defense, and the Causes of War,” p. 19.

23 Robert Jervis, “Cooperation under the Security Dilemma,” p. 194.

24 Donald Ewalt, “The Fight for Oil: Britain in Persia, 1919,” *History Today*, Vol 31 No 9 (September 1981) p. 11.

25 Robert Jervis, “Cooperation under the Security Dilemma,” p. 194.

absorbed. Frequent wars are almost inevitable since attacking will often seem the best way to protect what one has. This process will stop when state's borders reach—by expansion or contraction—a line of natural obstacles. Security without attack will then be possible.”²⁶ An example of such a tension is the repeated partition of Poland between the Russian empire and the Kingdom of Prussia at the end of the eighteenth century. The two strong powers on either side of the Polish border of the Eastern Europe repeatedly attacked Polish-Lithuanian Commonwealth that resulted in the elimination of Polish sovereignty for a period of 123 years.²⁷

Therefore, from the discussion above, we can infer some useful ways in which geography affects the offense-defense balance. Natural barriers affect a conflict in two ways. First, they discourage an attacker by raising the projected costs of an attack. Absence of such barriers may lure an attacker into taking a chance. Second, the travel distance to a conflict zone will not only affect the logistics supply, but also reduce the amount of force that a state can project away from its frontiers. Therefore, if two adversaries are not equidistant from the theater of operations, the closer belligerent has an advantage. The difficulties faced by the Royal Navy in the Falklands War holds some good evidence to prove this proposition. Terrain that provides defensive cover also favors a defender. If the defender is able to disperse assets and take the first blow without much damage, it has a chance to fight back.

Offense-Defense Balance and Alliance Behavior

Alliances are the most prominent ways of reducing the security dilemma in international politics. Depending upon the way allies are chosen, states either balance or bandwagon. In a balancing behavior, a state aligns *against* the source of power/threat. Alternatively, in a bandwagoning behavior, a state allies *with* the source of power/threat. Two predominant theories explain this conflicting behavior. The Balance of Power (BOP) theory by Kenneth Waltz asserts that in a self help, anarchic international system, states tend to balance against the “source of power” either internally (increasing own

²⁶ Robert Jervis, “Cooperation under the Security Dilemma,” p. 194.

²⁷ Robert Bideleux and Ian Jeffries, *A History of Eastern Europe*, (Kentucky: Routledge Publishers, 1998), p 156.

economic power, military strength) or externally (building alliances).²⁸ Thus, states align themselves with other weaker states to balance the power of the stronger state. Taking a different approach, Stephen Walt proposes a Balance of Threat (BOT) theory to describe certain conditions under which states tend to balance with the “source of threat.”²⁹ The two contradictory theories presented above exist in two entirely different types of environments. A BOP balancing world is characterized by policies of restraint and benevolence. Stronger states take care to avoid appearing aggressive, as the weaker states tend to balance against the aggressors. This is generally the case when differences of power between states are relatively equal, or when there are three or more significant powers in the system (multipolar systems). Small states are thus able to leverage their positions by allying with medium or lesser powers to counter stronger ones. By contrast, a bandwagoning world is more competitive and aggressive. If states tend to ally with those who seem dangerous, the stronger powers have an incentive to be aggressive. This is quite often the case towards the end of a war, for example, when a clear winner is obvious. Smaller states will ally with the largest power in order not to be trampled over or simply subsumed. Since aggression is valued in a BOT bandwagoning world, use of force is more readily resorted to and often prolonged.

Though the history reveals that balancing has been the general norm, bandwagoning behavior cannot be ruled out. Van Evera points out that “bandwagoning belief have been a recurring theme throughout the Cold War.”³⁰ For example, Soviet efforts to intimidate both Norway and Turkey into not joining NATO reveal the Soviet conviction that states will accommodate readily to threats, although these moves merely encouraged Norway and Turkey to align more closely with the West. Just because a state does not recognize a BOP situation and resorts to BOT actions (or vice versa) does not invalidate the theories—it just shows that states are as likely to misperceive the situation and thus make mistakes as individuals are. On the same note, Henry Kissinger often expressed his concerns about some US allies that could bandwagon under certain conditions. He once said: “If leaders around the world . . . assume that the US lacked

28 Kenneth N. Waltz, *Theory of International Politics*, (New York: McGraw Hill, 1979), p. 118.

29 Stephen Walt, *The Origin of Alliances*, (New York: Cornell University Press, 1990), pp 17-21.

30 Stephen Walt, *The Origin of Alliances*,” pp 101- 112.

either the forces or the will, they will accommodate themselves to what they will regard as the dominant trend.”³¹

An alliance, both for an aggressor and the defender, is hard to maintain. Various factors can test the integrity of an alliance. While, on one hand, sheer cultural diversity of the allied members is a challenge; on the other hand, self-interests of the states involved in an alliance pose its own problems. Olson points out this behavior when he remarks: “the idea that groups tend to act in support of their group interests is supposed to follow logically from the widely accepted premise of rational, self-interested behavior . . . if the members of some group have a common interest, and if would be better off with the objective achieved, then if they were rational, they would act to achieve that objective, but it is *not* true . . . unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make them act in their common interest.”³²

How does the alliance behavior affect the offense-defense balance? When confronted by a significant external threat, states either balance or bandwagon.³³ Thus, two distinct ways in which states select their alliance have contradictory effect on the offense-defense balance. If states decide to ally against a threat (balance), security dilemma will reduce since the defense will be prominent in the balance, however if states, out of fear, align with the aggressor (bandwagon), the security dilemma will worsen and balance will tilt in favor of offense. Historically, balancing behavior is preferred by states for a logical reason. Since perceptions in international politics are unreliable, and intentions can change, it is safer to balance against potential threats than to expect that the aggressor's behavior will not change—or worse, *hope* for benevolence from an aggressive ally. Even then, the possibility of bandwagoning should not be disregarded.³⁴

First Strike and Offense-Defense Balance

An offensive advantage in an offense-defense balance incentivizes a first strike. First strikes are classified into two categories: preemptive and preventive attacks.

31 Stephen Walt, *The Origin of Alliances*,” p. 116

32 Mancur Olson, *The Logic of Collective Action* (Cambridge: Harvard University Press, 1971), p 1.
[emphasis in original]

33 Kenneth N. Waltz, *Theory of International Politics*, pp. 117-126.

34 Stephen Walt, *The Origin of Alliances*,” p. 114.

Preemptive attacks are generally accepted as legitimate. These are used when the adversary's attack is *certain* and *imminent*. In other words, the attack is unavoidable and all but underway. In this case, striking the enemy first is a prudent option. In this way the state about to be attacked can use all of the assets at its disposal rather than having to absorb the first blow and respond with whatever assets remain. Preventive attacks are launched in response to far less immediate threats, and are generally perceived as illegitimate in international relations. The thought here is that the adversary is not yet ready to attack, or has not yet acquired the capability to attack, but as soon as it is ready and capable it is likely to attack. These attacks are motivated not by desire to strike first rather than second, but by the desire to fight sooner than later.³⁵

Van Evera argues, "The incentive to strike first is larger because a successful surprise attack provides larger rewards and averts greater dangers. A surprise attack that shifts the force ratio in attacker's favor pays it a greater reward. This expands the danger of preemptive war and makes crises more explosive. States grow more trigger happy, launching first strikes to exploit the advantage of the initiative, and deny it to an opponent."³⁶ Jervis puts the same logic in a slightly different way, when he calculates "if each dollar spent on the offensive can overcome each dollar spent on defense, and if both sides have the same budgets, then both are likely to build offensive forces and find it attractive to attack rather than to wait for adversary to strike."³⁷ Hence, both the authors, while pointing towards the advantages of the first strike ascertain that chances of first-strike are higher when offense has the advantage. Thomas Schelling makes a similar point, although in different style. Phrasing the temptation to strike first as a "need for haste," Schelling asserts that the "worst military confrontation is one in which each side thinks it can win if it gets the jump on the other and will lose if it is slow."³⁸ To a defender in such a situation, he advocates dispersal of one's retaliatory assets as a measure to discourage an adversary from a preemptive strike.³⁹ Reassuring a side that

35 Karl Mueller *et al.*, *Striking First: Preemptive and Preventive attack in U.S. National Policy* (Santa Monica, CA: RAND Report, 2006).

36 Van Evera, "Offense, Defense, and the Causes of War," p. 9.

37 Robert Jervis, "Cooperation under the Security Dilemma," p. 189.

38 Thomas C. Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966) p. 224.

39 Thomas C. Schelling, *Arms and Influence* p. 226.

keeps his retaliatory weapons safe, he writes, “If a country's retaliatory weapons are reasonably secure against surprise attack, preemptive or premeditated, the country need not respond so quickly to alarms and excursions.”⁴⁰ Therefore, first strike is tempting when the offense has an advantage, and the gains in return are assuredly high. The tactical advantage that a state can achieve through preemption and the surprise element that a state can achieve through prevention are the causes for haste. The situation is doubly unstable if both sides feel that they can gain by striking first. In the end, one side can discourage other side's preemption by dispersing, and securing, its retaliatory assets.

Conclusion

The aim of this chapter was to construct a template that can provide answers to the regional tensions of the Asia-Pacific region. A structural realist offense-defense theory, with some assumptions, was used create this template. The template states that if the intent of a state can be discerned based upon a state's military strategies and foreign policy (a function of action and words), then by calculating the offense-defense balance, we can achieve useful answers from the propositions of offense-defense theory. In a realist anarchic world order, states rely on self-help for their security. Since the international environment is filled with uncertainty, an enhancement in security of one state is a cause of concern for the other, and the other state responds by enhancing its own security. This creates a vicious crisis known as the security dilemma. Offense-defense theory evolves from this portrayal of the security dilemma.

Offense-defense theory simply predicts that the chances of war are high, whenever offense has an advantage. After a state's intent is presumably clear, the cumulative effect of the factors affecting offense-defense balance determines which among the two, offense or defense, has the advantage. Factors determining the offense-defense balance are technology, geography, and military alliances. If this balance favors an offensive intent, chances of war are high, and vice versa. The theory's proposition of nuclear weapons is judged in relation to aims of a possible conflict. Conventional wars with limited aims are considered feasible below the threshold of a nuclear war, and in limited wars—it is assumed—nuclear war is not an option. The next two chapters discuss

40 Thomas Schelling, *Arms and Influence*, p. 228.

China's A2AD strategy and the US strategy in a potential conflict in the Asia-Pacific region with an aim to clarify the intent of the two belligerents, and determine the offense-defense balance.



Chapter 3

Anti-Access/Area Denial Strategy (A2AD)

The theoretical discussion of the last chapter based on offense-defense theory made two important propositions. The first stated that weapons can be distinguished as offensive or defensive based on the intent of a state. The intent, in turn, is a function of a state's military strategy and its foreign policy. The second proposition stated that the offense-defense balance is a military advantage that can be measured by an assessment of comparative technological edge, geographic advantage, and allied support for the two sides. The last chapter also concluded that if the intent of the belligerents is distinguished, then the measurement of offense-defense balance could answer questions pertaining to security dilemma issues. This chapter aims to discuss these two propositions in China's context, and has two aims. First, it discusses the A2AD strategy in order to ascertain Chinese intent. Second, it attempts to assess the contribution of technology, geography, and allies in the China's A2AD strategy with an aim to measure the offense-defense balance in a potential conflict between the US and China in the Asia-Pacific region.

China's A2AD Strategy

Metaphorically, the A2AD strategy resembles the Great Wall of China built over centuries by the families of the warring states of Qin, Zhou, Yan, Chu, and Qi dynasties. The Great Wall is a series of fortifications made of stone, brick, tamped earth, wood, and other materials. An east-west oriented structure in the northern borders of China, some scholars insist that the Great Wall was part of a defensive strategy against the invasions of various nomadic groups and barbarians of the Eurasian Steppe. Other scholars, however, doubt the assertion that the intention behind this structure was entirely defensive. For example, Julia Lovell observes that many portions of the Great Wall were built inland, away from the borders, and serve no defensive purpose. She claims that the wall may have been a part of some aggressive territorial-gain strategy.¹ While intent behind the construction of the Great Wall may be debatable due to its antiquity, the shift in China's strategic military thinking from a defensive to an offensive one is traceable.

1 Julia Lovell: *The Great Wall: China Against the World, 1000 BC-AD 2000*, (New York: Grove Press, 2007) pp. 47-65.

The evolution of an offensive A2AD strategy is an ambitious story of China's economic growth, and change in priorities. During the period of the 1960s and 1970s, China had a poor economy and strained relations with its powerful and aggressive neighbor—the Soviet Union. Therefore, for its defense, China relied upon a time-tested defensive strategy in the form of Mao's “people's war,” which aimed at luring the enemy deep inside its territory, extending its lines of communication and eventually destroying it through prolonged attrition.² The rise of China's economy between 1978 and 1985 changed the essential assumptions of Mao's strategy, giving birth to many economic and political centers across the country. China now feared that during a war, an adversary could use these centers for retaining its communication and logistical chains, and that attrition was not a feasible option anymore. Thus, the strategy evolved from “people's war” to “people's war under modern conditions.”³ This strategy aimed at protecting the emerging and vital political and economic centers from a limited Soviet invasion. In the 1980s, as the relations between China and the Soviet Union began to improve, and the chances of war between the two states diminished, the military strategists began to prepare for a new kind of wars, which they called “local and limited wars.”⁴ These wars, aimed at the eastern front (Taiwan), were the first signs of China's growing ambition. The new strategy, also for the first time, aimed at replacing people with some sort of technology. The recent and the most ambitious evolution in the Chinese military strategy came in wake of the First Gulf War. Thoroughly impressed with the new kind of technological warfare, and disconcerted by the demolition of Russian equipment at the hands of the United States, the Chinese further revised their strategy. They realized that China's ambition in the east could only be fulfilled by denying the United States any kind of presence in its nearby waters. This led to the evolution of A2AD strategy based on a doctrine of “local wars under high technology conditions.”⁵

2 Gurmeet Kanwal, *China's New War Concepts for 21st Century Battlefields* (New Delhi: Institute of Peace and Conflict Studies, 2007) p. 1.

3 Cliff et al., *Entering the Dragon's Lair: Chinese Anti-access Strategies and Their Implications for the United States*, RAND Report (Santa Monica, CA: RAND, 2007) p. 19.

4 Paul H Godwin, “Chinese Military Strategy Revised: Local and Limited War,” *Annals AAPSS* (January 1992) p. 191. <http://www.jstor.org/discover/10.2307/1046762?sid=21105814332621>.

5 Cliff et al., *Entering the Dragon's Lair*, p. 23.

The definition of the A2AD strategy has two parts—anti-access and area-denial. Andrew Krepinevich, defining this strategy, claims, “Anti-access strategies aim to prevent US forces entry into a theater of operations, while, area-denial operations aim to prevent their freedom of action in the more narrow confines of the area under an enemy's direct control.”⁶ The US DOD modifies the above definition with a distance clause. Hence, the new definition of anti-access includes “those actions and capabilities, usually *long range*, designed to prevent an opposing force from entering an operational area,” while area-denial is defined as “those actions and capabilities, usually *short range*, designed not to keep an opposing force out, but to limit its freedom of action within the operational area (emphasis added).”⁷

Various Chinese military writings codify the war fighting principles of A2AD strategy. The first war fighting principle of this strategy is to seize the initiative early in a conflict. Chinese military analysts believe that Iraq (in the First Gulf War) could have made the war costly for the US by taking the initiative. Therefore, in a future war, China must not respond to a blow, but strike first. The second principle of such a strategy aims at raising the cost of conflict for the adversary. Some Chinese military thinkers believe that United States is sensitive to casualties and economic costs, and therefore the sudden destruction of a significant portion of its forces can be decisive. The third principle is to limit the opponent's strategic aims. China believes that if it fights for limited aims, then even as an inferior force, it could create a situation where an initial offensive could force an adversary to make required concessions, thereby yielding a favorable result. The fourth principle is to avoid direct confrontation with a superior adversary, and the last principle is to conduct concentrated attacks on key military targets such as command systems, information systems, weapon systems, and linkages between the systems.⁸ Van Tol observes that based on the above-mentioned principles, China would plan large-scale preemptive attacks to inflict severe damage on US forces and forward bases.

6 Andrew F. Krepinevich, Barry Watts & Robert Work, *Meeting the Anti-access and Area-denial Challenge*, CSBA Report (Washington, DC: Center For Strategic And Budgetary Assessments, 2003) p. ii.

7 U.S. Department of Defense, *Joint Operational Access Concept*, Version 1.0 (Washington, DC: Government Printing Press, 2012) p. 6.

8 Andrew N D Yang, *The Military of the People's Republic of China: Strategy and Implementation* (Madrid: Chinese Council of Advanced Policy Studies, 2008) p. 5.

Simultaneously, such a strategy would call for kinetic and non-kinetic attacks on US naval carriers, C4ISR systems, key logistics nodes, and communication and surveillance satellites.⁹ After a successful initial attack, China could “assume the strategic defense and deny reinforcing of US forces in the theater until United States realizes it is too costly for it to undo the damage.”¹⁰

To summarize, the A2AD is an offensive strategy developed to fulfill China's expansionist ambitions. The strategy is a result of an evolution that took place in the backdrop of a rising Chinese economy, stability in its western front, and technological warfare demonstrated by the United States in the First Gulf War. The strategy aims to deny access and maneuvering freedom to the United States in the Asia-Pacific region so that it can pursue its expansionist tendencies. Based on a set of offensive principles including seizing the initiative, China intends to make any limited war a costly proposition for the United States. Besides the offensive nature of the A2AD strategy, the aggressive posture adopted by China in the recent past (depicted by incidents covered in the first chapter) also clearly portrays the offensive intent of China. The remainder of this chapter describes the contribution of technology, geography, and allies in the A2AD strategy, thereby measuring the offensive component of offense-defense balance.

Technology Contribution in China's A2AD Strategy

The theoretical argument of the last chapter concluded that technology, by itself, is neither offensive nor defensive. Technology supports offensive and defensive intents, and the offense-defense balance tilts in favor of the state whose intent is better supported by advancing technology. China realized after the First Gulf War that in order to pursue the A2AD strategy, and thereby deny access and maneuvering freedom to the United States, it needed to bridge the vast technological gap, which existed between itself and the United States. The US DOD observes that China relies on foreign technology, acquisition of key dual-use components, and focused indigenous research and development (R&D) to advance its military modernization. A high priority for China's advanced technology acquisition strategy is its civil-military integration policy to develop

9 Van Tol *et al*, *Air Sea Battle: A Point-of-Departure Operational Concept*, CSBA Report (Washington, DC: Center For Strategic And Budgetary Assessments, 2003) p 21.

10 Van Tol *et al*, *Air Sea Battle: A Point-of-Departure Operational Concept*, p. 20.

an innovative dual-use technology and industrial base that serve both military and civilian requirements.¹¹

The most important technological advancement that supports the A2AD strategy is an anti-ship ballistic missile (ASBM) named DF-21D. ASBMs are specialized class of ballistic missiles with a Maneuvering Re-entry Vehicle (MaRV), and are capable of attacking large ships including aircraft carriers. US DOD confirms that the Chinese DF-21D is a variant of DF-21C/ CSS-5C—a 1,000 nautical mile range class MRBM developed from the JL-1 series solid rocket propelled SLBM carried by the PLA-N.¹² The DF-21D missile with its submunition-dispensing warhead is also an ideal weapon for targeting large number of airbases and unprotected aircraft.¹³ Its seeker apparently uses a combination of radar and optical sensors to find the target and make final guidance updates, and its warhead is a high explosive, radio frequency or cluster warhead that at a minimum can achieve a mission-kill.¹⁴ Many characteristics of the DF-21D make it a dangerous weapon. First, unlike an ASCM that cruises at low speed, an ASBM, even if armed with an inert concrete warhead, presents a highly lethal projectile due to its exceptional terminal velocity at impact. The kinetic energy at impact of a single ASBM MaRV is 10 to 20 times greater than that of a concrete pierce guided bomb.¹⁵ Therefore, if the missile hits any portion of the flight deck of a carrier, the warhead is likely to penetrate deep into the structure before the warhead initiates. Second, it is extremely difficult to detect and destroy these missiles before launch because much like its previous variants, the DF-21D is launched from an off-road mobile vehicle. In any contingency, these vehicles would be scattered over thousands of miles (not to mention the underground tunnels, especially designed to move these batteries) across the Chinese

11 Department of Defense, *Annual Report of the Secretary of Defense to Congress: Military and Security Implications Involving the People's Republic of China* (Washington, DC: Government Printing Office, 2014) p. 65.

12 Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014* (Washington DC: Government Printing Office, 24 April 2014) p. 36.

13 David Shaplak *et al*, *Question of Balance: A Political Context and Military Aspects of the China Taiwan Dispute* (Santa Monica, CA: RAND Report, 2009) p. 33.

14 Richard Fisher, Jr., "PLA and US Arms Racing in the Western Pacific," *International Assessment And Strategy Center*, 29 June 2011, http://www.strategycenter.net/research/pubID.247/pub_detail.asp#; Mission-kill is an effect produced by a weapon, when a ship is damaged to an extent that it is unable to continue with its mission anymore.

15 Dr Carlo Kopp, "China to Deploy Anti-Ship Ballistic Missile," *Defence Today Journal*, Vol.9, No. 3, 2011, pp. 40-42.

territory. Third, these missiles are also very difficult to intercept; the high re-entry velocity compounded with the maneuvers made by the MaRV during the terminal dive can pose tracking problems beyond the capabilities of missile defense systems such as the US Navy's Aegis.¹⁶ Finally, China intends to improve the lethality of these missiles by fusing hypersonic glide vehicle (HGV) technology to these missiles. Open sources claim that China conducted successful tests of HGV technology on 09 January 2014.¹⁷ Even though the HGV is not a novel technology (the USAF tested a Mach 15 HGV in 1960s), an HGV launched into space by an ICBM while gliding back at Mach 10 can immensely complicate interception problems.

China is also rapidly modernizing all components of its naval technology. Since the mid-1990s, China has acquired 12 Russian made Kilo-class non-nuclear-powered attack submarines (SSs), and put into service four new classes of indigenously built submarines. These new submarines are quite capable as compared to China's older-generation submarines.¹⁸ China also produces JIN-class nuclear-powered ballistic missile submarines (SSBNs) and operates three units of this type of submarine.¹⁹ China has continued to pursue indigenous R&D to enhance the capability of its submarine force. In August 2014, it was reported that researchers at the Harbin Institute of Technology in China are developing technology for a high-speed submarine that would take advantage of supercavitation (which essentially involves maintaining an air bubble around the submarine) to achieve speeds that are much higher than those of other submarines.²⁰ To extend its reach into the waters of the Pacific Ocean and build a Blue Water Navy, China has also started operating aircraft carriers. The first aircraft carrier—the *Liaoning*—is a refurbished ex-Ukrainian aircraft carrier, which is presently being used for training

16 Dr Carlo Kopp, "China to Deploy," pp. 40-42.

17 Bradley Perrett, Bill Sweetman, and Michael Fabey, "U.S. Navy Sees Chinese HGV As Part of Wider Threat," *Aviation Week & Space Technology*, 27 January 2014, <http://aviationweek.com/awin/us-navy-sees-chinese-hgv-part-wider-threat>.

18 Ronald O'Rourke, *China Naval Modernization: Implications for US Navy Capabilities-Background and Issues for Congress*, (Washington, DC: CRS Report, 23 December 2014) p. 8.

19 DOD, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, p. 47.

20 "Chinese Reportedly Working on Submarine That Would 'Fly' in An 'Air Bubble,'" *Washington Post*, 26 August 2014, <http://www.washingtonpost.com/news/morning-mix/wp/2014/08/26/the-chinese-are-reportedly-working-on-submarine-that-would-fly-in-an-air-bubble/>.

purposes. The construction of a second carrier has started indigenously; however, the technology of the aircraft carriers remains moderate when compared to the US Navy. The second carrier under construction will be conventionally powered (as compared to nuclear-powered carriers operated by the US Navy), and retain an older ski ramp system for aircraft launches (as compared to electromagnetic launch systems of the US Navy).²¹ This indicates that, technologically, the PLA Navy has yet to cover some ground to be able to compete with the US Navy. China is also improving its over-the-horizon (OTH) targeting capability with sky wave and surface wave OTH radars, which can be used in conjunction with reconnaissance satellites to locate targets at great distances from China, and hence support long-range precision strikes, including employment of ASBMs.²² To counter the theater based missile-defense capabilities of the US Navy, China has acquired Israel-origin Harpy anti-radiation weapons. These weapons home on to air-defense radars like the Aegis' SPY-1 radar, and overwhelm them with swarms of advanced ASCMs such as the SS-N-27 Sizzler and SS-N-22 Sunburn.²³ Despite the above-mentioned efforts, the PLA Navy suffers from some technological problems. DOD notes: "China would face several shortcomings in a near-term conflict . . . First, the PLA's deep-water antisubmarine warfare capability seems to lag behind. Second, it is not clear whether China has the capability to collect accurate targeting information and pass it to launch platforms in time for successful strikes against targets at sea beyond the first island chain."²⁴

In a conflict against the United States, perhaps no US military vulnerability is as important to China, as the US military's heavy reliance on communication, surveillance, navigation, and early warning satellites. Accordingly, as part of its A2AD strategy, China aims to maximize the use of space for itself, while denying its use for the adversary. The PLA has launched a number of maritime reconnaissance satellites that are capable of supporting theater missile operations with data. These include electro-optical (EO)

21 Minnie Chan, "Shanghai Shipyard 'To Build Second Chinese Designed Aircraft Carrier,'" *South China Morning Post*, 22 October 2014, <http://www.scmp.com/news/china/article/1621671>.

22 Shane Bilborough, "China's Emerging C4ISR Revolution," *The Diplomat*, 13 August, 2013, <http://thediplomat.com/2013/08/chinas-emerging-c4isr-revolution/>.

23 O'Rourke, *China Naval Modernization*, CRS Report, 2014, p. 7.

24 DOD, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, pp. 31-32.

satellites for digital imagery in the visual and near infrared spectrum; synthetic aperture radar satellites for nighttime, all-weather imagery; and electronic intelligence (ELINT) satellites for locating and identifying ships by their electronic emissions. In the year 2012 alone, China launched 11 new remote sensing satellites, and in September 2013 China launched its third series of naval ocean surveillance system (NOSS) satellites.²⁵ Today, more than thirty reconnaissance satellites support PLA strike operations and its BeiDou satellite navigation network is nearing completion. To deny the critical satellites to an adversary, China has invested heavily in its anti-satellite program. China's investments in the counter-space abilities started to yield results from the year 2005, when it tested 19 direct-ascent anti-satellite (ASAT) interceptor missile tests. In 2006, the director of the National Reconnaissance Office, Donald Kerr reported that China had used a ground-based laser to illuminate a US satellite.²⁶ Finally, on 11 January 2007, China destroyed one of its weather satellites with a SC-19 ballistic missile.²⁷ Recently, in May 2013, and then in July 2014, China allegedly conducted two more ASAT tests aimed at satellites in medium or high earth orbits.²⁸ China is also looking for a non-kinetic means to destroy satellites and may be developing a reusable space plane, named *Shenlong*. Even though the Chinese government has made no official announcements, some evidence of this experimental technology is available from open sources.²⁹ This space plane, when operational, would be capable of employing non-kinetic means to destroy satellites, thereby making it difficult to fix attribution.

China also believes that the cyber domain, due to its rapidly evolving nature and lack of international laws offers it a great technological advantage for its A2AD strategy. It has accordingly adopted an aggressive approach in developing skills and infrastructure in this field. In Beijing, China has developed a cyber entity very similar to the United

25 Ian Easton, *China's Evolving Reconnaissance-Strike Capabilities: Implications for the US-Japan Alliance*, Project 2049 Report: The Japan Institute of International Affairs, February 2014, p. 10.

26 Francis Harris, "Beijing Secretly Fires Lasers to Disable US Satellites," *The Telegraph*, 26 September 2006. <http://www.telegraph.co.uk/news/worldnews/1529864/Beijing-secretly-fires-lasers-to-disable-US-satellites.html>

27 Michael R. Gordon and David S. Cloud, "U.S. Knew of China's Missile Test, but Kept Silent," *The New York Times*, 23 April 2007, <http://www.nytimes.com/2007/04/23/washington/23satellite.html?>

28 Zachary Keck, "China Conducts Third Anti-Missile Test," *The Diplomat*, 24 July 2014, <http://thediplomat.com/2014/07/china-conducts-third-anti-missile-test/>.

29 Richard Fisher, Jr., "Shenlong Space Plane Advances China's Military Space Potential," *International Assessment and Strategy Center*, 17 December 2007, <http://www.strategycenter.net/research/pubID.174>.

States' NSA under the PLA General Staff Department's Third Department, which is tasked for signal intelligence and code breaking. Another organization named 61539 Unit, an equivalent of the US CYBERCOM, focuses at gathering political, economic, and military-related intelligence on the US through cyber means.³⁰ China's military strategists believe that in a fight against the US, whoever dominates the battlespace of cyberwar will occupy the new strategic high ground, and therefore they relentlessly carry out espionage and offensive cyber operations. In 2009, the United States realized that its electricity network had been hacked by Chinese hackers and that parts of its network could be shut down whenever the hackers wished to do so.³¹ In another attack the same year, the hackers breached Lockheed Martin's networks repeatedly, and copied several terabytes of information on the technology of the Joint Strike Fighter program.³² In its annual assessment of 2014, DOD reported, "China uses a large, well-organized network of enterprises, defense factories, affiliated research institutes, and computer network operations to facilitate the collection of sensitive information, export-controlled technologies, and basic research and science supporting U.S. defense system modernization."³³

To summarize, China is vigorously pursuing its efforts to bridge the technological gap with respect to the United States. DF-21D ASBM remains the most challenging technological threat of the A2AD strategy. China's naval modernization plans are aimed at building a Blue Water Navy, however at present, its technological capability cannot be compared with that of the US Navy. In the space domain, China is attempting to deny its adversary the use of space by developing technologies that target satellites with kinetic and non-kinetic means. In the cyber domain, China is offensively using espionage operations to steal and make up the gap in technology between itself and the United States.

30 Singer and Friedman, *Cybersecurity and Cyberwar* (New York: Oxford University Press, 2014) pp. 141.

31 Siobhan Gorman, "Electricity Grid in U.S. Penetrated by Spies," *Wall Street Journal*, 08 April, 2009, <http://www.wsj.com/articles/SB123914805204099085>.

32 Shane Harris, "*@War*," (New York: Harcourt Publishing, 2014) p. xv.

33 DOD, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, p. 49.

Geographical Contribution in China's A2AD Strategy

The previous chapter concluded that geography could affect belligerents, and therefore the offense-defense balance, in two ways. First, the presence or absence of natural barriers may dissuade or lure attackers from launching an offensive, and second, a large distance from the conflict zone adversely affects the logistical arrangements and the amount of forces that can be pitched in the conflict zone. This section makes an assessment how geography (particularly, the geography close to conflict zone) plays an important role in the calculations of China's A2AD strategy, and concludes that the nearby geography favors China's strategy. It does so by first discussing the disadvantages posed by the geography for the US forces, and then by discussing the advantages offered to the Chinese forces.

The conflict zone of the Asia-Pacific region is far away from the US mainland. For example, Taiwan, one of the most important flashpoint in the Asia-Pacific conflict, is about 1500 nm from the nearest US territory, Guam; it is nearly 4400 nm from Honolulu, and about 5600 nm from the West Coast of the United States mainland. This distance creates a large set of logistics problems for the United States. Van Tol explains: “The US military must transport virtually everything it needs across thousands of miles to sustain operations against an adversary operating in its front yard.”³⁴ The US manages this long distance logistics problem by maintaining a set of intermediate and forward bases. Guam, the closest US territory from the Asia-Pacific region, is an intermediate strategic base for the United States. Guam came under the control of the United States after the 1898 Spanish-American War as part of the Treaty of Paris and became a way station for US ships traveling to and from the Philippines and South Asia. Undefended by the US military, Japan invaded and occupied Guam in WW II. After the war, the Guam Organic Act of 1950 established Guam as an unincorporated organized territory of the United States. Guam currently stations the headquarters for Joint Region Marianas; the US Naval presence at Guam includes the presence of four attack submarines; and Anderson Air Force Base at Guam hosts a rotation of B-52 bombers, a squadron of F-22 aircraft, and an

34 Jan Van Tol *et al*, *Air Sea Battle: A Point-of-Departure Operational Concept*, p. 12.

ISR squadron of remotely piloted aircraft.³⁵ If Guam is an intermediate logistical node deep in the Pacific Ocean, then Kadena airbase in Okinawa, Japan is an example of the most forward geographically located base near the conflict zone. It is less than 500 miles from the Chinese coastline and less than 400 miles from Taiwan. Kadena hosts two squadrons of F-15 C/D, two E-3B/C, fifteen KC-135 tanker aircraft, and eight HH-60G helicopters.³⁶ It also hosts nine MC-130 aircraft for the Special Operations Group. Similarly, three bases in mainland Japan, namely Misawa, Iwakuni, and Yakota provide an immediate reserve force for any contingency in the region. Two F-16 C/D squadrons are based at Misawa, while Iwakuni is a Marine Corps base with its associated air element of F/A- 18 E/Fs and AV-8B Harriers.³⁷ Yakota airbase is an airlift and logistics hub and currently home to 374th Airlift Wing conducting C-130H and C-12J operations along with UH-1N light-lift utility helicopters.³⁸ Even after making these logistical arrangements, the location of these bases (especially in nearby geography) does not provide an ideal network of bases, and hinders mutual and timely support between these bases.

A brief analysis highlights this point concerning lack of mutual support by taking Taiwan as the flashpoint of conflict. In case of a potential conflict in Taiwan, US air operations against China would be undertaken from Kadena base since it is the closest to Taiwan. However, since Kadena is also close to China's coastline, it is vulnerable to China's SRBMs. Even though Kadena is on Japanese territory, targeting it may not escalate a direct war between China and Japan.³⁹ If the US forces from Kadena have to withdraw, they will be hard pressed to find a base that both lies outside the range of the China's SRBMs and is reasonably close to the conflict zone. For example, Misawa Air Base in the northern Japan is almost 1450 nm from the centerline of the Taiwan Strait,

35 Ernest Bower *et al*, "U.S. Force Posture Strategy in the Asia Pacific Region: An Independent Assessment." CSIS Report (Washington, DC: Center For Strategic And International Studies, 2012) p. 54.

36 Ernest Bower *et al*, "U.S. Force Posture Strategy," p. 51.

37 Ernest Bower *et al*, "U.S. Force Posture Strategy," p. 51.

38 Patrick Cronin *et al*, *Yakota Civil-Military Use of U.S. Bases in Japan*, (Washington, DC: Center for a New American Security, 2012) p. 13.

39 By targeting Kadena base, China can use its force to pursue its limited aim of denying the area to US forces, while at the same time, keeping Japan out of the conflict by not targeting US bases on Japan's mainland.

but only 550 nm from the Chinese territory; therefore, the distance to the strait is roughly tripled as compared to Kadena base. A similar situation can be expected in other flashpoints.

On the other hand, the conflict zone is very close to Chinese territory. Taiwan is less than 120 nm from Chinese coastline, and during the 1996 Taiwan Strait crisis, the flight time of Chinese missile tests conducted around the island was less than two minutes. Figure 1 shows the Chinese anti-access umbrella covering the nearby region. The islands, in the Chinese eastern and southern waters, from the Chinese perspective have often been described as a set of two chains: The First Island Chain, which is generally thought to run from the Japanese main islands through the Ryukyus, Taiwan, the Philippines, and Borneo, thus roughly bounding the East and South China Seas; and the Second Island Chain which stretches from the north at the Bonin Islands southward through the Marianas, Guam, and the Caroline Islands, encompassing the western Philippine Sea.⁴⁰ Both these island chains are within the reach of China's SRBMs. Further, the strategic width and depth of the mainland China gives it options to scatter its missile, radar, and air bases. China has twenty-seven airbases within range of Taiwan alone as compared to one hosted by the United States. Some of the PLA ISR systems including the OTH-B radar are located as much as 300nm deep inside the territory.⁴¹ The bow shape of China's coastline gives it an added advantage to operate along the interior lines against its adversary. By doing so, China can retain the capability to switch its forces, and therefore economize its efforts along the imaginary arc of battle.⁴²

40 Van Tol *et al*, *Air Sea Battle: A Point-of-Departure Operational Concept*, p. 13.

41 Van Tol *et al*, *Air Sea Battle: A Point-of-Departure Operational Concept*, p. 59.

42 For a discussion on interior and exterior lines of operations, see Jomini, *The Art of War* (New York:Dover Publishers, 2007), p. 93.



Figure 1: The Chinese ASBM Anti-Access Umbrella

Source: (Reprinted from: RAND (Cliff *et al*), “*Entering the Dragon’s Lair*”, p. 112.)

To summarize, this section concludes that the nearby geography favors the offense component of the offense-defense balance, and further poses two specific problems for the United States. First, the long distance to the conflict zone translates into long supply chains, which may be critical in a conflict. Second, the US bases close to China are not only vulnerable to the Chinese SRBM missile threat, but may not be able to provide the ideal mutual support in case of a localized conflict at any one of the flashpoints. For China, the nearby geography poses no such logistical problems, and the strategic depth of the mainland allows it to disperse its military assets. The shape of its coastline with respect of the nearby geography allows it an additional advantage to operate along the interior line, thereby helping it economize the efforts of its forces.

Allies Considerations for China's A2AD Strategy

The last chapter discussed two ways in which states align their interests in a situation of security dilemma—balancing (aligning against the source of power/threat)—and bandwagoning (aligning with the source of power/threat). The peacetime behavior of

the states in the Asia-Pacific can help predict the ways in which these states will resort to a balancing or bandwagoning behavior in a potential conflict against China. However, while analyzing the present peacetime behavior of the states in the Asia-Pacific region with respect to China, it is important to understand that the behavior of these states depends upon their security as well as economic concerns. While on one side, China displays an aggressive and expansionist attitude towards its neighbors, it also extends an opportunity for the states to gain economically by engaging with China. The result is that states carefully tend to choose the best course of action, which would be in their interest. A hypothesis presented in this section is that the immediate neighbors of China (where China can most readily project its power) tend to display a balancing behavior based on security concerns, while the states at distance (where China is unable to project its power at present) tend to engage economically with China for monetary gains, while remaining concerned of China's aggressive behavior. This does not mean that these distant neighbors display a bandwagoning behavior. Instead, they seek to maximize their economic gains because their security interests are not threatened at present. The rest of the section provides evidence to prove this hypothesis.

Japan, Vietnam, and Philippines are the immediate neighbors fighting territorial disputes with China. All these nations display a balancing attitude against China. Japan is engaged with China in two maritime disputes. The first is about the delimitation of the two nation's maritime boundary, and the second is related to the sovereignty of the Senkaku/Diaoyu Islands. Both disputes have resulted in confrontations between Japan and China, and China has been regularly intruding in the 12 nm territorial water zone around the disputed islands. Japan has adopted a clear balancing behavior against China by aligning itself with the United States. The initial US-Japan alliance, forged after the defeat of Japan in WW II and aimed at providing a significant platform for US military readiness in the Pacific, has found a new balancing meaning in the present context of China's aggressive attitude. About 53000 US troops are stationed in Japan and have exclusive access to 89 facilities. In exchange, the United States guarantees Japan's security to the extent of providing a "nuclear umbrella."⁴³ The United States and Japan

43 Emma Chanlett-Avery *et al*, *Japan-U.S. Relations: Issues for Congress*, (Washington DC: CRS Report,

have been steadily enhancing bilateral cooperation in various defense aspects like BMD, cyber security, and military use of space. In 2013, the two allies agreed to revise the Mutual Defense Guidelines—the main document defining the bilateral defense arrangement.⁴⁴ Vietnam, another immediate Chinese neighbor at the mouth of the SCS, has always been suspicious of China's ambitions due to its own history. China ruled Vietnam for more than 1000 years before Vietnam gained its independence in the year 939. Thereafter, during the Ming dynasty China ruled Vietnam from 1407 to 1428. In the twentieth century, Sino-Vietnamese tensions resurfaced in the 1970s, when Beijing and Hanoi clashed over territorial claims. In November 1978, Vietnam formed an alliance with the Soviet Union to balance the Chinese threat. Recently, in the spring of 2014, the state-owned China National Offshore Oil Corporation (CNOOC) moved a large exploratory oil rig into the waters that Vietnam claims lay on its continental shelf.⁴⁵ After the incident, Vietnam sought help from the United States to which the US replied by condemning the unilateral Chinese aggression, and assuring assistance to Vietnam.⁴⁶ The strained relations between the US and Vietnam since the Vietnam War are quickly normalizing. A signal of this improving relationship was a four-day visit to Vietnam by Army General Martin Dempsey in August 2014, the first visit by a Chairman of the Joint Chiefs of Staff since 1971.⁴⁷ Military to military engagements between US and Vietnam include joint naval engagements, Vietnamese shipyards repairing US naval vehicles, and the Vietnamese Defense Ministry sending officers to US staff colleges and other military institutions.⁴⁸ Therefore, even though some legacy issues of the Vietnam War persist, including the damage by Agent Orange to the people and environment of Vietnam, remain unresolved, Vietnam displays an assuring balancing behavior against China in a future potential conflict. Philippines, another immediate Chinese neighbor, has also been

20 February 2014) p. 18.

44 Emma Chanlett-Avery *et al*, *Japan-U.S. Relations*, p. 19.

45 Greg Torode, “U.S. Criticizes Chinese Oil Rig Move Amid Vietnam Protests,” *Reuters*, 06 May 2014, <http://www.reuters.com/article/2014/05/06/us-china-vietnam-usa-idUSBREA450WL20140506>.

46 Mark E Manyin, *US-Vietnam Relations in 2014: Current Issues and Implications for US Policy*, (Washington DC: CRS Report, 24 June 2014) pp. 6-10.

47 Tom Vanden Brook, “Former Enemy Vietnam Seeks US Help To Counter China,” *USA Today*, 18 August 2014, <http://www.usatoday.com/story/news/world/2014/08/17/>.

48 Mark E Manyin, *US-Vietnam Relations in 2014: Current Issues and Implications for US Policy*, (Washington DC: CRS Report, 24 June 2014) p. 22.

regularly intimidated by China over disputes islands. The latest confrontation was a protracted standoff in the spring and summer of 2012 over the Scarborough shoal. Philippines has constantly displayed a balancing behavior against China by aligning itself militarily with the United States. The Philippines is an ally of the United States under the 1951 Mutual Defense Treaty, and the two nations have long conducted joint military exercises to bolster the combat readiness of the Armed Forces of Philippines. In 1991, the Philippine Senate voted against the Military Bases Agreement between Philippines and the United States, forcing the closure of Subic Naval Base and Clark Air Force Base, however, in 1995 US forces were recalled when China's construction was noticed on the Midchief Reef in the disputed Islands. A Visiting Forces Agreement (VFA) was thereafter signed between the two countries in 1998; and the Philippines was designated as a major non-NATO ally status on 06 October 2003 after President Arroyo announced Manila's support for the US-led invasion of Iraq.⁴⁹ Recently in April 2014, the United States and the Philippines signed an agreement that will provide US forces with increased access to Philippine bases.⁵⁰

The distant neighbors of China (whether sharing territorial disputes with China or not) tend to maximize their interests by engaging with China economically, while remaining alert and suspicious regarding China's aggressive behavior. Australia, for example, a key non-NATO ally of the United States, is seeking a balance between China and the United States for its economic and security interests. The US-Australia bilateral defense and alliance relationship has remained strong for more than 100 years. Australia hosts a 2500-strong US Marine detachment on a rotational basis as part of a Marine-Air Ground Force in its northern territory, and all its domestic political parties consider the US as a key source of stability. The US-Australia joint defense facilities aid in intelligence collection, ballistic missile early warning, submarine communication, and

49 Thomas Lum, *The Republic of the Philippines and the US Interests* (Washington DC: CRS Report, 05 April 2012) pp. 14-16.

50 Mark Landler, "U.S. and Philippines Agree to a 10-Year Pact on the Use of Military Bases," *New York Times*, 27 April, 2014, http://www.nytimes.com/2014/04/28/world/asia/us-and-the-philippines-agree-to-a-10-year-military-pact.html?_r=0.

satellite-based communication.⁵¹ The economic relationship between the two nations is also strong. The Australia-United States Free Trade Agreement (AUSFTA) came into force on 01 January 2005. US goods and services trade with Australia totaled \$60 billion in 2011, and US foreign direct investment (FDI) in Australia increased to \$136.2 billion in 2011.⁵² Yet, Australia is reviewing its foreign policy in the new era of China's rise. A 2013 Defense White Paper gives us some insight into the emerging foreign policy of Australia. An underlying theme of this document is the shift of economic and geopolitical power from West to East and the need for Australia to seek to shape the international environment in support of its strategic and economic interests.⁵³ Australia has benefited extensively by trading with China. Recently, the two countries signed a new Free Trade Agreement (ChAFTA) to promote this economic relationship.⁵⁴ However, Australia remains concerned about the strategic posture of China and its expansionist activities in the recent past, and has been vocal in condemning its recent incursions in the South China Sea.⁵⁵ Similarly, Singapore, another distant neighbor of China, also follows the Australian model of engagement in its relationships with the US and China. On one hand, Singapore became the first Asian country to sign a bilateral FTA with the United States, and actively negotiate in the Trans Pacific Partnership (TPP); on the other hand, it maintains strong bilateral economic relations with China. However, just like Australia, it condemns China's aggressive attitude, and in 2011 questioned China to clarify its island claims. As a potential balancer against China, Singapore maintains strong bilateral defense relations with the United States. The 2005 "Strategic Framework Agreement" formalizes the bilateral defense ties, and allows the US military access to facilities on a

51 Department of Defense, *Defending Australia in the Asia-Pacific Century: Force 2030*, Australian Government White Paper 2009, p. 94.

http://www.defence.gov.au/whitepaper/2013/docs/WP_2013_web.pdf.

52 Office of the United States Trade Representative, *Free Trade Agreements Australia*, 01 August 2013, <https://ustr.gov/trade-agreements/free-trade-agreements/australian-fta>.

53 Department of Defense, Australian Government White Paper 2013, pp. 1-5.

54 Paul Schroder, "ChAFTA 2014: The Winners, The Threshold and Opportunities," *Mondag*, 20 November 2014, <http://www.mondaq.com/x/355066/international+trade+investment/ChAFTA>.

55 Kyodo New International, "Japan, US, Australia Concerned by China's Naval Activities," *Global Post*, 04 October 2013, <http://www.globalpost.com/dispatch/news/kyodo-news-international/131004/japan-us-australia-concerned-chinas-naval-activities>.

rotational basis. The agreement also allows the US to operate resupply vessels from Singapore and use a naval base and an airfield.⁵⁶

To summarize, the behavior of states of the Asia-Pacific region can be categorized into two broad categories. The first encompasses immediate neighbors of China that clearly exhibit a balancing attitude against China's aggressive behavior, and are likely to ally with the United States in a potential conflict; the second category includes those nations that are cooperating with China for economic gains, while staying skeptical of China's aggressive attitude. Two important conclusions stem out of this summary. First, no state exhibits bandwagoning behavior, and therefore, the alliance factor does not add anything to the offensive component of the offense-defense balance. The second offshoot is that some states, at best, may end up remaining neutral in a potential conflict between China and the US, and therefore these states will not contribute to the offensive component of the offense-defense balance.

Conclusion

This chapter assessed the China's intent based on its A2AD strategy, and measured the contribution of technology, geography, and allies towards the offense-defense balance. China's A2AD strategy is based on a set of offensive principles including seizing the initiative, striking early to inflict disproportionate damage, and raising the cost of conflict for the United States. The strategy is also aimed at changing the status quo position in the Asia-Pacific region, and help China pursue its expansionist ambitions. Therefore, A2AD strategy exhibits the offensive intent of China. The offensive component (a measure of the contribution of technology, geography and allies) of the offense-defense balance is moderate at present. Technologically, China has produced an offensive weapon—DF-21D ASBM—that is capable of threatening the carrier ships of the US Navy, however, other technology of the PLA-N such as submarines and aircraft carriers do not pose a significant challenge for the US. China is also pursuing technologies in the space and cyber domains to bridge the technological gap. Moreover, nearby geography favors the Chinese A2AD strategy—hence adds to the offensive component of the offense-defense balance. It does so by creating logistical

⁵⁶ Emma Chanlet-Avery, *Singapore: Background and US Relations* (Washington DC: CRS Report, 26 July 2013, pp. 2-7.

problems for the US, while allowing China to target most US forward bases with its SRBMs. The behavior of states near China is surely not bandwagoning, and in a conflict between China and the US, states may choose between balancing against China and remaining neutral. Therefore, there is no allied contribution to the offensive component of the offense-defense balance. The next chapter repeats this exercise for the US strategy against China.



Chapter 4

Counter A2AD Strategy

The last chapter discussed China's A2AD strategy, and concluded that the intent of China is offensive. It thereafter discussed the contribution of technology and geography towards the offensive component of the offense-defense balance, and concluded that these factors moderately contribute towards the offensive component. This chapter aims to apply the same model of assessment for the US strategy regarding China. The chapter first discusses the US strategy against China's A2AD strategy with an aim to assess the intent of the US, and thereafter assesses the contribution of technology, geography, and allies in determining the offense-defense balance.

The US Counters A2AD Strategy—Air Sea Battle Concept

The United States' strategy against the Chinese A2AD strategy is based upon the Air-Land Battle doctrine developed during the Cold War, albeit with a slight difference. While the Air-Land Battle was developed to counter the Warsaw Pact threat in a European ground war, the Air-Sea Battle—an Air Force and Navy coordination concept—is not aimed against a specific adversary, but is designed to “protect the US ability to project power and secure the sea and air lanes.”¹ The 2010 Quadrennial Defense Review Report noted, “the Air Force and Navy together are developing a new joint Air-Sea Battle concept for defeating adversaries across the range of military operations, including adversaries equipped with sophisticated anti-access and area denial capabilities.”² This concept was initially forged as a collaborative effort of Pacific Air Forces, the Center for Strategic and Budgetary Assessment (CSBA), and the Office of Net Assessment at the Pentagon. Evolution of this concept is attributed to the result of three years of war games conducted against a simulated rising military competitor in the East Asian littoral, who possessed a range of disruptive capabilities, including multidimensional anti-access networks, offensive and defensive space control

1 Marc V. Schanz, “Air Sea Battle’s Turbulent Year,” *Air Force Magazine*, October 2011, <http://www.airforce-magazine.com/MagazineArchive/Pages/2011/October%202011/1011airsea.aspx>.

2 Department of Defense, *Quadrennial Defense Review Report of the Secretary of Defense* (Washington, DC: Government Printing Office, 2010) p. 32.

capabilities, and a modernized attack submarine fleet.³ As these capabilities are all available to the PLA, described in the previous chapter, the analysis that follows will specifically look at China as a potential or hypothetical opponent in the Air Sea Battle construct. The key findings of these war games highlighted the necessity of dispersing aircraft and ships well before the start of hostilities, increasing the resiliency of base infrastructure, enhancing ballistic missile defense capabilities, and strengthening long range strike capabilities.⁴ In 2009, the US Navy and USAF signed a memorandum of understanding to draft the tentative Air Sea Battle doctrine.⁵

Even though the details of the Air Sea Battle concept are classified, a general plan of action is discernable from the unclassified published reports of the CSBA. In summary terms, Air Sea Battle envisions integrated Air Force and Navy operational concepts to mitigate missile threats to the US bases; correct imbalances in strike capabilities; enhance undersea operations; offset the vulnerabilities of space-based command and control (C2) and intelligence, surveillance, and reconnaissance (ISR) systems; increase interoperability; and enhance electronic and cyber warfare capabilities.⁶ The concept has two distinct phases—initial defensive followed by an offensive one. The concept assumes that the United States would not initiate the hostilities, and therefore in the start, US forces should be able to withstand the initial blow, limit damage and thus preserve its strength to fight back. The defensive measures include three options: first, withdrawing from the damage limits of the A2AD zone; second, dispersing assets across the Western Pacific; and third, adopting passive defensive measures. The option of withdrawal from the A2AD zone would mean that the US forces retreat to Guam, or even Hawaii to avoid damage from early or preparatory missile strikes. The second option of dispersal aims to increase the number of targets and thereby diminish the value of defeating any particular base.⁷ This option was examined during a war-game called Pacific Vision, when the US

3 Richard Halloran, "AirSea Battle," *Air Force Magazine*, August 2010, p.47.

<http://www.airforcemag.com/MagazineArchive/Pages/2010/August%202010/0810battle.aspx>

4 Richard Halloran, "AirSea Battle," *Air Force Magazine*, August 2010, pp.44-48.

5 Christopher P. Cavalas, "USAF, U.S. Navy To Expand Cooperation," *Defense News*, 2009 <<http://www.defensenews.com/story.php?i=4366295>>.

6 Van Tol *et al.*, *Air Sea Battle: A Point-of-Departure Operational Concept*, p. xiv.

7 Rebecca Grant, "Countering the Missile Threat," *Air Force Magazine*, December 2010, p. 43.

<http://www.airforcemag.com/MagazineArchive/Pages/2010/December%202010/1210missile.aspx>

forces were simulated to spread along an arc ranging from Alaska in the north to Australia in the South, with intermediate bases in Guam and Southeast Asia. Potential bases in Southeast Asia included Clark Air Base in the Philippines, Utapao and Krot in Thailand, and Cam Ranh Bay and Tan Son Nhat airbases in Vietnam.⁸ The third option of passive defense advocates measures such as hardening of shelters, increasing runway repair capacity, and building underground facilities. After recovering from the initial blow, the US forces would execute a “blind campaign” against the hypothetical foe.⁹ This would include attacks against space-based ocean surveillance systems, manned and unmanned ISR platforms, and the IADS. The offensive portions of the concept also place special emphasis on standoff long-range penetrating strike using stealth aircraft that can be launched from outside the A2AD zone.¹⁰

To summarize, the United States aims to check any aggressive intentions China may contemplate so to maintain regional stability in the Asia-Pacific region. Besides protecting the sea-lanes of communications, it has a commitment towards many of its allies in this region. As a response to the Chinese A2AD strategy, the United States has developed a defensive strategy, which aims to defeat the A2AD strategy by adopting a defensive posture, and preserving its retaliatory potential. The United States does not appear to seek any territorial gains for itself; instead it aims to maintain status quo. Based on these facts, the intent of the US is concluded as defensive. The remainder of the chapter describes the contribution of technology, geography, and allies in the US strategy, thereby measuring the *defensive* component of offense-defense balance.

Technological Considerations for the US Strategy

The United States sets the standard for military technology in today's world, and to date the US military has demonstrated the ability to use its technology to enhance its combat effectiveness far greater than any other country. China's A2AD strategy is also inspired by the technological supremacy demonstrated by the US in the First Gulf War. Accordingly, there is a need for the US to maintain its technological edge, if it aims to

8 Richard Halloran, “Air Sea Battle,” p. 48.

9 Van Tol *et al*, “Air Sea Battle,” p. 52.

10 Van Tol *et al*, “Air Sea Battle,” p. 53.

project power in a challenged environment. This section explores the technologies that the United States is pursuing to maintain this technological edge with respect to China.

The foremost technological challenge in an A2AD environment for the United States comes from the DF-21D missile threat. A strong ballistic missile defense (BMD) is therefore essential for the United States to retain access in any region. The US has pursued the concept of BMD for a long time and the concept has evolved. A conceptual change took place following the First Gulf War, when US forces faced difficulty in detecting and engaging the sporadic Scud missiles launched from dispersed locations in the Iraqi territory. The Defense Support Program (DSP)—the Cold War era, missile detection system—was designed to detect hot, long-range strategic missiles, rather than inter theater ballistic missiles. The Scud missiles launched in the Iraqi theater lay at the edge of detection range of DSP posing significant difficulties.¹¹ As a lesson from this war, the US changed its orientation of missile-defense from a state-based threat to a rogue actor threat and modified its original SDI missile defense program into a new concept named Global Protection Against Limited Strikes (GPALS). This new architecture is intended to be capable of shooting down 200 re-entry vehicles—the number that a rogue Russian strategic submarine commander could launch—so long as terrestrially-based interceptors are within range.¹² In accord with this shift in policy to theater BMD, the US Navy is now equipped with the Aegis system. Presently, the technology of the Aegis BMD is under up-grade with SM-3 Block II-A to improve its kill-probability, however there are limitations to this technology.¹³ Even the latest Aegis SM-3 technology is capable of intercepting a ballistic missile in the exo-atmosphere only—it does not provide an endo-atmospheric interception capability.¹⁴ Additionally, a saturation attack could place practical limits to how many simultaneous engagements against ASBMs can be handled by a single BMD system. To address these problems, the

11 United States Space Command, “Operation Desert Shield and Desert Storm Assessment,” p. 15. <http://nsarchive.gwu.edu/NSAEBB/NSAEBB39/document10.pdf>.

12 Michaela Dodge, “Space-based Missile Defense: Advancing Creativity, Protecting Lives,” *SpaceNews*, 11 August 2014. <http://spacenews.com/41559space-based-missile-defense-advancing-creativity-protecting-lives/>.

13 Ronald O'Rourke, *Navy Aegis Ballistic Missile Defense (BMD) Program: Background and Issues for Congress*, (Washington, DC: CRS Report, 03 March 2015) p. 20.

14 Dr Carlo Kopp, “China to Deploy Anti-Ship Ballistic Missile,” *Defence Today Journal*, Vol.9, No. 3, 2011, pp. 40-42.

US Navy is developing a number of new weapon technologies such as an electromagnetic rail gun (EMRG), high-power free electron lasers (FELs) and solid state lasers (SSLs), whose potential missions include air and missile defense. Theoretically, the electromagnetic rail gun can create a barrage of swirling high-density projectiles in the endo-atmosphere to deflect the path of an incoming missile.¹⁵ However, at present these projects are under development and their operational capabilities are restricted.¹⁶ Besides hard kill technologies, some less popular but probably more effective soft kill technological improvements are being pursued to counter the China's DF-21D missile threat. Such methods would include masking the exact location of Navy ships or confusing ASBM reentry vehicles. Ronald O'Rourke explains that employing a combination of hard and soft kill methods would attack various points in the ASBM “kill chain”—the sequence of events that needs to be completed to carry out a successful ASBM attack.”¹⁷

The overall technology of the US Navy is well ahead of the PLA Navy. For instance, the US Navy operates nuclear-powered aircraft carriers giving it greater cruising endurance as compared to China's conventional carrier. These nuclear-powered carriers can accommodate 60 or more aircraft (as compared to 24 for China's conventional carrier). The US Navy can launch its fixed-wing aircraft over both ship's bow as well as angled deck using catapults, which can give these aircraft a range/payload capability greater than those aircraft launched with a ski ramp. The latest US Navy *Ford*-class (CVN-78) aircraft carrier uses advance technologies including the electromagnetic aircraft-launch-systems (EMALS), advanced arresting gear (AAG), and dual band radar (DBR), which would provide a great advantage to the US Navy in projecting power in an anti-access environment.¹⁸ Similarly, the intelligence and surveillance gathering platforms are changing to unmanned rotary and fixed wing UAVs. Admiral Jonathan

15 Harry Foster, “Disruptive Innovations and Air Superiority” (lecture by Center of Strategy and Technology at Air University, 21 April 2015).

16 Ronald O'Rourke, *Navy Shipboard Lasers for Surface, Air and Missile Defense*, (Washington, DC: CRS Report, 04 March 2015) p. 2.

17 Ronald O'Rourke, *China Naval Modernization: Implications for US Navy Capabilities-Background and Issues for Congress*, (Washington, DC: CRS Report, 23 December 2014) p. 55.

18 Ronald O'Rourke, *Navy Ford (CVN-78) Class Aircraft Carrier Program*, (Washington, DC: CRS Report, 24 March 2015) p. 9.

Greenert, in December 2011, wrote, “The future US Navy Fleet will deploy a larger and improved force of rotary wing unmanned aerial vehicles (UAVs) including Fire Scout and the armed Fire-X. Those vehicles were invaluable in recent operations in Libya. Fire Scouts can provide continuous surveillance more than 100 miles away. Even more significant, the future Fleet will include UAVs deploying from aircraft carrier decks.”¹⁹ In accord with his statement, X-47B, an unmanned combat aerial vehicle, has successfully started its operations from USS *Theodore Roosevelt*.²⁰ Mines and submarines form another persistent threat in an A2AD environment. To address this problem, the US Navy is developing a large variation of underwater surveillance technologies. One such revolutionary technology is underwater-unmanned vehicles (UUVs). DARPA, a US DOD agency responsible for the development of emerging technologies, while commenting on the UUV technology claims “just as satellites provide a wide-area view of the ground from space, these systems can see submarine threats passing overhead across vast volumes of ocean.”²¹ The underwater vehicles can be divided into small and large displacement categories. In future, the large-displacement variant of these UUVs will deploy from ships, shore, or Virginia-class submarine payload tubes to conduct surveillance missions, while submarines will use the small-displacement UUVs to extend the reach of their organic sensors.²² Similarly, the airborne laser mine detection system (ALMDS) pods deployed on MH-60 helicopters is an example of an emerging technology that aims to defeat an A2AD strategy by creating a composite picture of underwater mines.²³

The US is also technologically capable of denying space access to China while retaining use for itself in a hostile environment. Even though the US has not pursued a

19 Jonathan Greenert, “Navy, 2025: Forward Warfighters,” *U.S. Naval Institute Proceedings*, Vol. 137, No. 12 (December 2011) <http://www.usni.org/magazines/proceedings/2011-12/navy-2025-forward-warfighters>.

20 Sydney J. Freedberg Jr., “X-47B Drone & Manned F-18 Take Off & Land Together In Historic Test,” *Breaking Defense*, 17 August 2014, <http://breakingdefense.com/2014/08/x-47b-drone-manned-f-18-take-off-land-together-in-historic-test/>.

21 DARPA, “*Breakthrough Technologies For National Security*,” March 2015, pp 15. <http://www.darpa.mil/WorkArea/DownloadAsset.aspx?id=2147488951>

22 Ronald O'Rourke, *Navy Virginia (SSN-74) Class Attack Submarine Procurement*, (Washington, DC: CRS Report, 26 March 2015) p. 6.

23 US Naval Forces Central Command Public Affairs, “ALMDS Conducts Maiden Deployment in 5th Fleet AOR” 06 August 2014, http://www.navy.mil/submit/display.asp?story_id=82594.

dedicated ASAT program like China has, it has demonstrated its technological capability at least thrice: the first anti-satellite test was an air-launched ASAT in 1985; the second was a high-powered laser test against its satellite in 1997; and the third test in February 2008 was conducted by an Aegis destroyer against a deorbiting US satellite, ostensibly, a response to China's ASAT.²⁴ Among new projects that can evolve as ASAT systems is the US Air Force's Boeing X-37B—a small technology demonstrator space plane capable of military use.²⁵ Similarly, after the retirement of the US Space Shuttle in 2011—that incidentally was never equipped with any space combat missions—NASA is funding a Nevada Corporation's *Dream Chaser*, a small space plane that could carry a crew of seven and could potentially carry out military missions in space.²⁶ DARPA is also pursuing novel military ways of retaining access to space in light of existing China's ASAT threat. In its 2015 report, it declared, “DARPA is developing new approaches to launching satellites into orbit on short notice and at low cost, including by means of reusable first-stage and space-plane systems, which have the potential to enable launch of satellites from virtually anywhere with just 24 hour notice and at a fraction of current costs.”²⁷ Further, DARPA is developing a family of highly precise and accurate, navigation and timing technologies that can function in GPS-denied environment and provide necessary information on time and position through alternate distributed systems.²⁸

In the cyber domain, the United States is acknowledging the threat to its C4ISR and other cyber related systems in any future conflict by upgrading its cyber technologies and organizing itself to better respond to wartime contingencies. A four-star general commands the US Cyber Command established in 2010. Organizationally, USCYBERCOM plans calls for the creation of three types of Cyber Mission Forces.

24 Moltz, James Clay, “*The Politics of Space Security*,” (Stanford, CA: Stanford University Press, 2008), pp. 6.

25 Chris Bergin and William Graham, “Third X-37B Returns After Two Years In Space,” *NASA Spaceflight*, 17 October 2014, <http://www.nasaspaceflight.com/2014/10/third-x-37b-returns-home-two-years-space/>.

26 Press Release, “Sierra Nevada Corporation Announces Major Award under NASA’s Commercial Crew Development Program,” 18 April 2011, http://www.spacedev.com/press_more_info.php?id=315.

27 DARPA, “*Breakthrough Technologies for National Security*,” March 2015, pp. 5.
<http://www.darpa.mil/WorkArea/DownloadAsset.aspx?id=2147488951>

28 DARPA, “*Breakthrough Technologies for National Security*,” March 2015, pp. 4.

First, the “national mission forces,” tasked to protect computer systems that empower electrical grids, power plants, and other infrastructure deemed critical to national and economic security; second, the “combat mission forces,” which help the commanders abroad plan and execute attacks or other offensive operations; and third, the “cyber protection forces” that fortify the Defense Department’s networks.²⁹ These three forces would ensure that the adversary does not succeed in critically damaging the United States’ information system. Similarly, DARPA’s Cyber Grand Challenge (CGC), scheduled to conclude in 2016, is applying decades of groundwork in Artificial Intelligence (AI) to create fully automatic network defense systems. The program is aimed at finding solutions to computer program flaws, formulate patches and deploy them on networks in real time, thereby creating a software redundancy in the cyber domain.³⁰ Another technological program called “Plan X,” aims to create cartography of all the network computers around the world, and help operators identify the overall cyber environment so that they can identify cyber traffic, assimilate cyber-effects, and plan alternate routes in case of congestion.³¹

To summarize, while DF-21D remains the biggest technological challenge of the A2AD strategy, the overall advantage still lies with the United States. The emerging technologies mentioned in the section provide a positive outlook for the US; however, two observations are worth noting. First, some of these technologies are still in various stages of experimentation, and second, these technologies are costly. It would take a great deal of financial investment for the United States to convert these emerging technologies into actual deterrence. Nevertheless, the emerging technologies would significantly contribute towards the defensive component of the offense-defense balance.

Geographic Considerations for the US Strategy

A similar section of the previous chapter, while discussing the impact of nearby geography on the offense-defense balance, highlighted the advantages that the nearby geography provides for the China’s A2AD strategy in a possible conflict in the Asia-

29 Catherine A Theohary and Anne Harrington, “*Cyber Operations in DOD Policy and Plans: Issues for Congress*,” (Washington, DC: CRS Report, 05 January 2015) p. 14.

30 DARPA, “*Breakthrough Technologies for National Security*,” March 2015, p. 36.

31 For a detailed report on Plan X, see, Cheryl Pellerin, “DARPA’s Plan X Uses New Technologies to ‘See’ Cyber Effects,” *DOD News*, 11 June 2014, <http://www.defense.gov/news/newsarticle.aspx?id=122455>.

Pacific region. It concluded that the large distance of the conflict zone poses logistical and mutual support problems for the United States, while China faced no such problems, and could target most of the US forward bases with its SRBMs. This section assesses the impact of distant geography on the offense-defense balance.

Three distant geographical features, crucial to determine the offense-defense balance in this context: First, the Malacca and nearby straits that channelize the Chinese commercial traffic. The Strait of Malacca is a narrow (500 nm) stretch of water between the Malaysian Peninsular and the Indonesian Island of Sumatra. The world's second busiest waterway, the Malacca Straits have gained strategic importance of being the shortest, cheapest, and most convenient sea-link between the Pacific and the Indian Ocean.³² The closest alternative sea routes to the Malacca Strait are the Sunda and Lombok Straits. These narrow but deep passages connect the Java Sea to the Indian Ocean. The second important distant geographical feature is the South China Sea (SCS) itself. It is a marginal sea of the larger Pacific Ocean that encompasses an area from Singapore and the Malacca Straits to the Strait Taiwan—a total area of around 1,400,000 sq miles.³³ The third important geographic feature are the dispersed bases spread around the South Asia region, to which the US forces can withdraw to defend themselves from the initial attack of the A2AD strategy. These distant geographic features provide three options for the US strategy to retain access in the region.

The first option comes in the form of a possible distant blockade of Malacca and nearby strategic straits. China is immensely dependent upon imported energy to sustain its economy. In 2012, China imported 60 percent of its oil, and future estimates project that China will import two-thirds of its oil by 2015 and three-quarters by 2030.³⁴ The geography of the Western Pacific funnels the Chinese merchant traffic far away from mainland China. In 2012, approximately 84 percent of China's oil imports transited

32 Chia Lin Sien, "The Importance of Straits of Malacca and Singapore," *Singapore Journal of International & Comparative Law* no. 2 (1998) pp. 301-322.
<http://law.nus.edu.sg/sybil/downloads/articles/>.

33 Robin McDowell, "A Look at the Top Issues at Asian Security Meeting," *The Guardian*, 21 July 2011, <http://www.theguardian.com/world/feedarticle/9755825>.

34 Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, (Washington, DC: Government Printing Office, 2014), p. 18.

through the Strait of Malacca.³⁵ US DOD in its annual report to Congress notes that even though China is diversifying its energy transportation options by constructing new pipelines, such as the one from Kyauakpya (Myanmar) to Kunming, its growing energy demand will only slightly alleviate its dependency on the Strait of Malacca.³⁶ The United States can exploit this vulnerability to its advantage by using a potential blockade as a deterrent. Jan Von Tal echoes this thought in the ASB concept when he proposes a distant blockade and interception of merchant ships to deter China. He explains: “Since direct Chinese commerce with the United States and Japan would cease at the outbreak of conflict, there would be little, if any, trans-Pacific traffic left to intercept. Most interdiction efforts would focus on ships trying to transit the South China Sea. Traffic bound for China would be intercepted as it tried to enter the southern portions of the South China Sea, i.e., beyond range of most PLA A2AD systems, from the Malacca, Singapore, or major Indonesia straits.”³⁷

Another RAND study of 2013 proposes a blockade of these straits with the help of land-based Anti-Ship Missiles (ASMs) in the Western Pacific. Acknowledging the limitation of the United States as a signatory of INF treaty (which restricts it from indigenous manufacturing of medium range missiles), the report suggests that: “Land-based ASMs are readily available in the world's arms markets . . . they are inexpensive and would provide significant capabilities to the United States . . . These capabilities would significantly complicate PLA’s C2 . . . and would also raise the cost of conflict for China.”³⁸

35 Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, (Washington, DC: Government Printing Office, 2014), p. 18.

36 Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014* (Washington, DC: Government Printing Office, 2014), p. 18.

37 Van Tol *et al*, “Air Sea Battle,” p. 76.

38 Terrence K. Kelly *et al.*, *Employing Land-Based Anti-Ship Missiles in the Western Pacific*, RAND Report (Santa Monica, CA: RAND, 2013) pp. xi-xv.

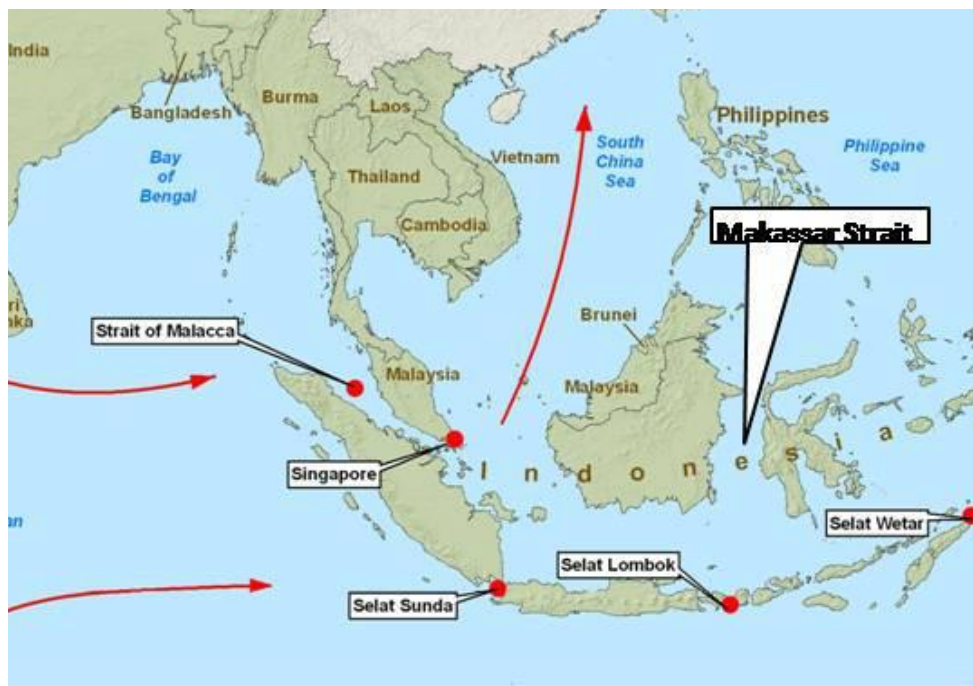


Figure 2: Malacca and Nearby Straits as Potential Choke Points

Source: (Adapted from: US Department of Defense, *“Military Power of the PRC 2009 Report, p 4.”*)

The second strategic option for the US lies in supporting the military capabilities of nations that surround the South China Sea. These nations are strategically placed around the SCS, have territorial disputes with China, and display a firmness to oppose China's aggressive attitude. Nations including Indonesia, Malaysia, Vietnam, and Philippines are relatively closer to the waters they claim, while China is more distant from the disputed region. China also does not possess the blue water naval capability to project power in the disputed region against all of these nations concurrently. A DOD report of 2014 estimates the PLA Navy consists of 137 major (submarine plus large surface combatants) and an assorted mix of lesser vessels in three fleets: the North, East, and South Sea fleets.³⁹ With this limited naval capability, projecting power close to 1000 miles south of Hainan Island is an ambitious task for China. Further, many of the nations surrounding the SCS own airstrips in some of the disputed islands, while China does not (though China may be in the process of constructing airstrips). For example, in the Spratly Islands dispute, China is the only nation not to occupy an island with an airstrip. All other contestants of this disputed group of islands own an airstrip. Taiwan has an

³⁹ Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, Secretary of Defense, (Washington, DC Government Printing Office, 2014), pp. 7.

airstrip on Itu Aba island, the Philippines has an airstrip on Pagasa island, and Malaysia has Swallow Reef (a reef on which it reclaimed land and built an airstrip).⁴⁰ Most of these nations are engaged in strengthening their maritime forces, and regularly host the US Navy and Air Force at their ports and bases. For example, Singapore, located at the southern tip of the SCS, has a small, yet first-rate navy operating quality platforms and weaponry, and its mariners are reputed for their skill and elan. Vietnam dominates the western shore of the SCS with its strategic Cam Ranh Bay, operates six Kilo-class diesel submarines recently acquired from Russia, and docks US Navy supply ships regularly.⁴¹ Philippines also displays a firm behavior against China, and has a history of hosting US naval and air forces. Therefore, by supporting a firm pro-US attitude of these nations regarding China, the US can offset the aggressive behavior of China at a distant location.

A final option that the distant geography provides for the US strategy is preservation of its assets through dispersal. The US forces through dispersal of its assets can absorb the initial punch of the A2AD strategy, and later respond more ferociously. The United States has numerous options for dispersing its assets varying from Changi, a port facility in Singapore that can berth US nuclear-powered aircraft carriers to Darwin base in Australia, which is in an invaluable position at the seam between the Pacific and Indian Oceans external to Southeast Asia.⁴² US forces can also fall back as far as Guam base, which is an organized, unincorporated US territory, in the middle of the Western Pacific. A distinct advantage Guam provides is that a Chinese strike against Guam would be an attack on US territory, and this factor would play in Beijing's decision-making calculus. Dispersal of assets can therefore provide flexibility of operations to the US forces. On a similar logic, the RAND Corporation had proposed a plan named "flexbasing," which divided the US offshore bases into three categories. The first category was a set of large core support locations located on US territory (such as Guam),

40 James Hardy, "China building airstrip-capable island on Fiery Cross Reef," *IHS Jane's 360*, 20 November 2014, <http://www.janes.com/article/46083/china-building-airstrip-capable-island-on-fiery-cross-reef>.

41 Wendell Minnick, "Vietnam Confirms Kilo Sub Buy at Shangri-La," *Defense News*, 5 June 2011, <http://archive.defensenews.com/article/20110605/DEFSECT03/106050301/Vietnam-Confirms-Kilo-Sub-Buy-Shangri-La>.

42 Marcus Weisgerber, "Singapore Will Now Host 4 Littoral Combat Ships," *Navy Times*, 2 June 2012, <http://archive.navytimes.com/article/20120602/NEWS/206020313/Singapore-will-now-host-4-littoral-combat-ships>.

which could house large amounts of support material and munitions. The second category was a set of forward support locations (which could house warehouses stocked with material). The third category was a set of forward operating bases in foreign nations (which would provide runways, fuel, water, ramp space, and possibly small stocks of munitions). Depending on the location of the conflict and the degree of access, logistical support from the core and forward support could provide facilities to the forward bases—hence the name “flexbasing.”⁴³

To conclude, the distant geography favors the US strategy, and thus balances the advantages of nearby geography to China. First, in accord with the Air Sea Battle concept, the geography provides distant choke points, where a use of force by the United States can create economic problems for China, and therefore dissuade it from attacking the nearby flashpoints. Second, the firm attitude of distant nations around the SCS provides an opportunity for US strategy to build upon, and third, the US has numerous options to scatter and defend its forces from the initial blow of the A2AD strategy, and therefore preserve its potential for a subsequent fight.

Allies Considerations for the US Strategy

The last chapter, while assessing the contribution of allied component in measuring the offense-defense balance concluded that many states are wary of China's aggressive behavior and no state is expected to bandwagon with China in a potential conflict. The states may either balance against China or stay neutral. This section explores the challenges that the US faces in its alliance with states of the Asia-Pacific region.

The most important alliance in a possible conflict between the US and China is the US-Japan alliance. While the alliance is based on mutual security, and Japanese Prime Minister Shinzo Abe is a strong supporter of the alliance, certain domestic social factors in Japan and recent events have tested the alliance. For example, in 2013, Japan approved the relocation of a Marine Corps Air Station (MCAS) from Futenma (a crowded area of southern Okinawa) to another sparsely populated area of Nago City,

43 Killingsworth, *et al*, *Flexbasing: Achieving Global Presence for Expeditionary Aerospace Forces*, RAND Report (Santa Monica, CA: RAND, 2000) pp. 22–24.

Okinawa; however, most Okinawans opposed the construction of this new base for a mix of environmental and social reasons.⁴⁴ Okinawans argued the US-Japan security alliance, even though significant, poses a disproportionate burden on the residents of Okinawa. Statistically, about 25 percent of all facilities used by the US forces in Japan and over half of the US military personnel are located in the Okinawa prefecture.⁴⁵ Besides social concerns, some misunderstandings have also tested the US-Japan alliance in the recent past. In November 2013, China enforced a unilateral Air Defense Identification Zone (ADIZ) in the East China Sea. Japanese and the US officials reacted sharply to the move, while reiterating their mutual defense treaty. Two days later, the US Air Force flew B-52 bombers on a planned training flight through China's new ADIZ without notifying Chinese authorities, and the Japanese military aircraft followed soon after, thereby portraying the strength of the alliance. However, civil airlines of the US and Japan followed different notification rules in the ADIZ. While the United States briefed its commercial airlines to notify Chinese authorities when transiting through the new ADIZ, Japanese commercial airlines did not respond to China's identification requests. This difference in procedure at a crucial time made some Japanese analysts believe that the US had acceded to China on commercial airline guidance.⁴⁶ In Japan, some domestic sections have also urged for a more independent role in protecting regional security. As a result, in 2013, Japan released its first ever “National Security Strategy,” which calls for a proactive approach by Japan in tackling its security issues including disputes with China.⁴⁷ A similar challenge appears in the US-Australia alliance, where Australia is trying to balance its relationship between the US and China. An Australian Defense White Paper of 2009 called for a “neutral strategic posture,” and “armed neutrality,” to

44 “US Base Row on Okinawa Worsens as Tokyo Refuses To Bend,” *Daily Times*, 24 March 2015, <http://www.dailytimes.com.pk/foreign/24-Mar-2015/us-base-row-on-okinawa-worsens-as-tokyo-refuses-to-bend>.

45 Emma Chanlett-Avery et al., *Japan-U.S. Relations: Issues for Congress*, (Washington, DC: CRS Report, 20 February 2014) p. 20.

46 Asahi Shimbun, “Japan Baffled by US Telling Airlines to Respect New Chinese Air Zone,” *The Asahi Shimbun*, 01 December 2013, http://ajw.asahi.com/article/behind_news/politics/AJ201312010019.

47 Takeshi Yuzawa, “Japan's New Security Strategy: Changing National Identity?” *East Asia Forum*, 20 March 2014, <http://www.eastasiaforum.org/2014/03/20/japans-new-security-strategy-changing-national-identity/>.

the extent of disengagement from its alliance with the United States if needed.⁴⁸ The 2013 Defense White Paper has amended this posture in view of a strong commitment by the US in the Asia-Pacific region. Nevertheless, these incidents do indicate the challenges that the US faces in keeping its key allies committed.

Thailand is another key ally of the US since 1953, which is crucial in a potential conflict against China in the Asia-Pacific region. Thailand provides the US access to strategically located military bases such as the Utapao airbase. Critical for its capacity to receive C-17 and C-130 aircraft, as well as its proximity to a deep seaport, has been considered for a permanent Southeast Asian Humanitarian Assistance and Disaster Relief hub by the United States. However, the country's domestic political stability and democratic development has been shaken by extensive political turmoil and two military coups in the past eight years. After the 2006 coup that deposed populist Prime Minister Thaksin Shinawatra, the military again seized power again in May 2014. The United States has responded by suspending an estimated \$10.5 in million foreign assistance, which in turn has adversely affected military and security ties.⁴⁹ A similar issue persists between US and Vietnam relationship, where the human rights violations by the authoritarian rulers of Vietnam has limited the pace and extent of the improving relations. Over the past four years, criticisms of Vietnam's human rights record, including from some of the US Congress, appear to have played a significant role in convincing the US Administration to oppose a number of items desired by Hanoi.⁵⁰

Indonesia and Malaysia—the two countries that would be crucial in blockading the Malacca and nearby straits—also maintain a neutral standpoint and appear to diversify their options when it comes to foreign relations. Indonesia, on one hand, promised a strong bilateral relationship with the United States after President Obama's visit in November 2010, and on the other hand, attempts to thaw its stiff relations with China. In 2005, Indonesia signed a strategic economic agreement that allowed increased

48 For neutral strategic posture, see, Department of Defense, *Defending Australia in the Asia-Pacific Century: Force 2030*, Australian Government White Paper 2009, p. 46.

49 Emma Chanlett-Avery and Ben Dolven, “*Thailand: Background and US Relations*,” (Washington, DC: CRS Report, 19 June 2014) pp. 2-12.

50 Mark E Manyin, *US-Vietnam Relations in 2014: Current Issues and Implications for US Policy*, (Washington, DC: CRS Report, 24 June 2014) p 16.

Chinese investments in Indonesia, particularly in the energy and mineral sectors have grown markedly in recent years.⁵¹ Malaysia has also oscillated its opinion between advocating for “Asia-only” institutions with no outside involvement, and pitching strongly for a US involvement to ensure regional stability.⁵² US relations with Malaysia were fraught under long-time Prime Minister Mahathir, who was a vocal advocate of Asia-only institutions; however, the present regime has taken visible steps to support US initiatives in the region. At the same time, Malaysia has diversified its defense equipment between US and Russian technology, and its defense equipment contains a mix of US and Russian weaponry.⁵³

To summarize, this section has highlighted the uncertainties and challenges that the United States faces on a regular basis in keeping the alliance intact in the Asia-Pacific region. Every state presents a set of individual domestic, social, and political issues that need to be addressed on a regular basis. The strategy of United States requires the cooperation from most of the nations in the region. A neutral stand by any of the states implicitly favors China's strategy. Thus, in the context of allies, it is concluded that a balancing behavior would add to the defensive component, while even a neutral standpoint by any state of the region would contribute towards the offensive component of the offense-defense balance.

Conclusion

To conclude, the US strategy involves adopting an initial defensive posture with an aim to preserve its assets, before responding to an offensive A2AD threat. Further, the United States is not seeking territorial gains in the Asia-Pacific region, and endeavors to maintain status quo for the stability of the region. Therefore, the intent of the US is concluded as defensive. Technologically, besides the DF-21D threat which remains the challenge in an A2AD environment, the United States has a distinct technological edge with respect to China. The US Navy as compared to the PLA Navy operates better

51 Bruce Vaughn, *Indonesia: Domestic Politics, Strategic Dynamics and US Interests*, (Washington, DC: CRS Report, 31 January 2011) pp. 12-14.

52 Ian E Rinehart, *Malaysia: Background and US Relations*, (Washington, DC: CRS Report, 23 May 2014) p. 4.

53 Ian E Rinehart, *Malaysia: Background and US Relations*, (Washington, DC: CRS Report, 23 May 2014) pp. 2-14.

carriers, and possesses better anti-submarine and underwater surveillance capabilities. Even in space and cyber domain, the United States would be able to offset the denial technologies of China. However, some of these technologies are under development, and many of them are costly. Nevertheless, the technological edge adds substantially to the defensive component of the offense-defense balance. The contribution from the distant geography to the defensive component is also immense. China's dependence on the Malacca and nearby straits for its commercial sea transportation is a vulnerability that the United States can exploit and deter China from initiating any unilateral offensive action. The US can also use dispersed bases to preserve its assets before replying offensively to China's A2AD strategy. On the alliance note, the chapter concludes that only a balancing behavior of states in the Asia-Pacific region against China would add to the defensive element of the offense-defense balance, and a neutral standpoint would actually benefit China's offensive plans. Having established the intent of two belligerents, and discussed the elements of the offense-defense balance, the next chapter will answer questions related to the security dilemma in the Asia-Pacific region.

Chapter 5

Conclusions and Implications

The Problem

Each of the last four chapters had a specific function. The first chapter delineated the problem; the second chapter constructed a template based on offense-defense theory; the third and fourth chapters measured the offense-defense balance with an aim to seek answers to the questions posed in this thesis. This final chapter summarizes the effort, and draws useful conclusions to our questions. The broad aim of this thesis was to assess the security dilemma issues in the Asia-Pacific region that have evolved as a result of China's aggressive behavior and the US's corresponding rebalance policy. The main questions that the thesis asked were: what are the chances of a conflict between the US and China in the Asia-Pacific region; will China attempt to strike first; who, between China and the US, has a strategic advantage; and what is the role of allies a potential conflict?

Methodology

To answer these questions, I created a template based on offense-defense theory. A structural-realist theory of Cold-War era, the offense-defense theory simply states whenever offense has an advantage; the chances of war are high, and vice-versa. The original theory has an independent variable, namely, offense-defense advantage; and a dependent variable—likelihood of war. These are modified by two intervening variables: first, whether an offensive weapon can be distinguished from a defensive weapon, and second, whether the offense-defense balance can be measured. To seek answers related to the security dilemma issues in the Asia-Pacific context, the template made three modifications to the original theory. The first was that the weapons can be distinguished as offensive or defensive based on the *intents* of the two belligerents. In the Asia-Pacific context, China's A2AD strategy is an indicator of its intent, and since the strategy is based on a set of offensive principles that include seizing the opportunity, and striking first, China's intent was assessed as offensive. On the contrary, the US strategy to retain access to the region is based on absorbing the first blow, and retaliating subsequently,

hence, the US intent is assessed as primarily defensive. The second modification that the template allowed was that a conventional war *is possible* between two nuclear-armed states if it is for *limited* aims. In other words, even if the two states possessed nuclear weapons, they are unlikely to use them, until and unless the sovereignty of either of the nations is threatened. The third modification of the template (picked from the original theory itself) is that the offense-defense advantage or balance could be measured as a function of three factors—technology, geography and allied support. The theoretical outcome can be stated as once the intent of the two belligerents is clearly deciphered as offensive and defensive, the measurement of offense-defense balance provides useful answers to the questions related to the security dilemma.

Conclusions

The first factor involved in the measurement of the offense-defense balance was technology. The study concluded that China is aggressively pursuing the means to bridge the technological gap with respect to the United States, and that technology lies at the heart of its A2AD strategy. DF-21 remains the most potent technological weapon capable of targeting large number of airbases, unprotected aircraft, and large ships including aircraft carriers. The PLA-N is also embracing many technologies to upgrade itself to a Blue-Water Navy status, at present however, these technological capabilities are no match for the US Navy. China has also made considerable progress in ASAT technology and uses cyber technology for espionage and other offensive operations. On the other hand, the US maintains a considerable technological advantage in all domains except in BMD. While the US Navy is better equipped technologically, and continues to add new technologies to enhance its capability of power projection, the survivability of its aircraft carriers against a potential DF-21D attack is still questionable. In all other domains, the US has sufficient advantage to discourage China from taking an offensive action. In addition, the evolving critical technologies such as rail guns and directed energy weapons further add to the defensive component by offsetting some of the limitations of the present BMD system.

The influence of geography on the offense-defense balance is best appreciated when the effects are divided into two distinct categories: effects from the nearby

geography and effects from the distant geography. The nearby geography favors China, and therefore provides advantage to the offense. The proximity of the conflict zone poses no logistical problems to China, and makes it economical for China to target the US forward bases. The bow shape of China's eastern frontier allows it to operate along interior lines and thereby make efficient use of its forces. On the contrary, the conflict zone creates enormous logistical problems for the United States, and makes its forward bases vulnerable to Chinese ballistic missiles. The distant geography though, favors the US, and therefore provides advantage to the defensive component. China's dependence on the nearby straits, particularly the Straits of Mollucca, for the safe flow of its energy needs combined with a hostile neighborhood of states ready to resist the Chinese aggression and availability of a large number of bases to which the US can disperse its assets provides many options for the US to balance the offensive advantage provided by the nearby geography.

The study identifies allied behavior—due to its fragile nature—as the most *critical* factor in the determination of the offense-defense balance. In peacetime, the behavior of states in the Asia-Pacific region is being shaped based by their security and economic concerns. While the US on one hand provides a security assurance, on the other hand, China—even with its aggressive behavior—provides a large number of economic opportunities to the regional states. The dilemma between security concerns and economic benefits is shaping the behavior of these states in a peculiar manner. The immediate neighbors of China including Japan, Vietnam and the Philippines, who feel more threatened due to their proximity, clearly demonstrate a balancing behavior against China. More distant states such as Australia and Singapore, who do not feel as directly threatened due to their physical distance from China, tend to engage with China economically, while remaining concerned about their security. The application of this behavior to the offense-defense balance is that none of the regional states are bandwagoning, and therefore none of the states contribute to the offensive component. However, the flip side of this behavior is that some of the states in the region may adopt a neutral stance at the time of conflict, which suits the China's A2AD strategy, since in that case the US may not have access to some of the strategic locations in the Asia-Pacific

region. The possibility of some of the states adopting a neutral posture at the time of conflict is aggravated by the domestic social and political peculiarities of individual states.

Based on the measurement of the offense-defense balance, the study concludes that *at present*, the defense has an advantage, and therefore, the chances of war are low. In the same logic, China is unlikely to strike first, since the balance is tilted in favor of defense. However, the situation is precarious and therefore prone to change in future.

Implications

The different ways in which the three factors (technology, geography, and allied support) contribute to the offense-defense balance have important implications. The rapid pace of technological evolution does not guarantee that the US would continue to maintain the technological advantage it enjoys at present. It would require a great deal of effort and money to maintain this edge. The evolving nature of technology can rapidly shift the balance of offense-defense from a defender to an aggressor. Therefore, it is pertinent that not only adequate investments are devoted to advancing technology, but also that cost-effective and resilient technologies should be pursued to retain any advantage. In the near future, technologies such as rail guns and directed energy weapons will immensely add to the defensive component of the offense-defense balance, whereas ASAT and advanced anti-ship weapons could shift the balance toward offense.

The study identifies geography as the most *stabilizing* factor in the offense-defense balance. The contribution of geography in determining the offense-defense balance is unlikely to change in near future, at least until the time the PLA-N gets sufficiently strong to project its power in the Malacca and nearby straits. The fragile nature of the allied contribution to the offense-defense balance requires the US to invest maximum attention, and energy in the keeping the alliance intact to ensure a successful counter-strategy to the A2AD threat. Strengthening the security apparatus of individual allies by providing them with apt equipment, and training; and economic engagement with these states through policies like the Trans Pacific Partnership (TPP) can help the US demonstrate its commitment, and add to the defensive component of the balance for a longer period.

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